

QUALITATIVE ASPECTS OF THE INSTRUCTIVE- EDUCATIONAL PROCESS SPECIFIC FOR SOCIAL AND EMOTIONAL LEARNING PROGRAMS

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Abstract: The study represents a pre-testing of a social and emotional learning program taken over from the British experience and developed in Romania aiming at the research of major aspects regarding the quality of the instructive-educational process. The research is a qualitative one, developed on the semi-structural observation over 47 children from Iasi. There is a wide variety of obtained results and conclusions, confirming the advanced hypothesis regarding the best practices in the teaching-learning process, the attractiveness of programs for children and the improvement of the learning environment. The study ends with a series of useful recommendations for the practice of integrating social and emotional learning programs in the Romanian educational system.

Keywords: social and emotional learning, self-management, social-awareness, relationship skills, responsible decision-making.

1. Introduction

1.1. The background

Social and emotional learning represents a new problem emerged in the sciences of education field, that is increasingly becoming a complementary component of academic learning and a revolution of teaching process, through the complexity and the benefits it generates. Of course this type of education has been not created in a void of educational thinking and practice, from a pure coincidence or from the spontaneity of the exploratory educational experiments, but from the challenges of macro-social changes, from the inadequate coping skills of children and from families and communities ebulliences. Although it's been a while since it was proclaimed the need for counterbalancing the knowledge acquisition in favour of the logical and axiological structures such as skills and attitudes, yet this approach is fragmentary, rather identifiable within the aims of education and less directly related to the explicit educational contents. This is due to the complexity and generalization being operated in the sphere of values which allows a much less analytical intercession, subordinated in measurable and observable behaviours. On the other hand, attaching an exhaustive importance to academic education, the learning of efficient ways of life management shall be considered as a natural aspect that the students will learn anyway, under the

premise that all adults handle difficult situations without having received special education in this respect.

Social and emotional learning, particularly as it is known in the U.S., is found in educational theory and practice in the international context with the same name or using other terms or variations such as: personal and social development, social and emotional aspects of learning, emotional intelligence, emotional learning, social and emotional competence, social and emotional education, emotional literacy, mental health and well-being, social, emotional and behavioral skills, life skills. After International Academy of Education and International Bureau of Education (UNESCO) social and emotional learning “is a way of teaching and organizing classrooms and schools that help children learn a set of skills needed to manage life tasks successfully, such as learning, forming relationships, communicating effectively, being sensitive to others’ needs and getting along with others.” (Elias, 2003: 7). In the chapter one from *Children Needs III* about social and emotional learning Joseph Zins and Maurice Elias define the concept as follows: “In simple terms, social and emotional learning (SEL) is the capacity to recognize and manage emotions, solve problems effectively, and establish positive relationships with others, competencies that clearly are essential for all students. Thus, SEL targets a combination of behaviours, cognitions, and emotions.” (Zins, Elias, 2006:1)

In American perspective social and emotional education involves the development of five groups of skills summarized by CASEL as follows:

- *Self-awareness*—accurately assessing one’s feelings, interests, values, and strengths; maintaining a well-grounded sense of self-confidence
- *Self-management*—regulating one’s emotions to handle stress, control impulses, and persevere in overcoming obstacles; setting and monitoring progress toward personal and academic goals; expressing emotions appropriately
- *Social awareness*—being able to take the perspective of and empathize with others; recognizing and appreciating individual and group similarities and differences; recognizing and using family, school, and community resources
- *Relationship skills*—establishing and maintaining healthy and rewarding relationships based on cooperation; resisting inappropriate social pressure; preventing, managing, and resolving interpersonal conflict; seeking help when needed
- *Responsible decision-making*—making decisions based on consideration of ethical standards, safety concerns, appropriate social norms, respect for others, and likely consequences of various actions; applying decision-making skills to academic and social situations; contributing to the well-being of one’s school and community” (CASEL, Skills and Competencies, Web)

From the British perspective there are five social and emotional aspects of learning correlative with those from U.S., which represent the ultimate aims of educational programs: self-awareness, managing emotions, motivation, empathy, and social skills.

Training of social and emotional skills through formal and non-formal educational programs includes a number of obvious benefits summarized by Professor

Katherine Weare and Gay Gray of the University of Southampton in the study published in 2003 “*What works in developing children's emotional and social competence and wellbeing?*”: greater educational and work success, improvements in behaviour, increased inclusion, improved learning, greater social cohesion, improvements to mental health. (Weare, Gray, 2003: 34-36). In December 2008, the Organization CASEL ends a stage of its complex multi-year study led by John Payton, Roger P. Weissberg and Joseph A. Durlak, with the report “*The Positive Impact of SEL for Kindergarten to Eighth-Grade Students: Findings from Three Scientific Reviews*”. This report summarizes the results of three large-scale synthesis of research on the impact of social and emotional learning programs on students in primary and secondary education. Thus, students who followed the social and emotional education programs have shown improvements in social-emotional skills, attitudes towards self, school and others, social behaviour, academic performance, and reducing conduct problems and emotional stress. Moreover, SEL interventions were effective, both in school and after-school structures, for students with and without problems, from different environments and at all stages of schooling. The results were preserved in the follow-up and were effective when carried out by school staff so they can be incorporated into routine educational practice. (Payton, Weissberg, Durlak, 2008: 5-6)

1.2. Nature and purpose of the study

The here study has as main purpose the deep identification of the specific of the social and emotional learning as it is defined and applied in the international context, and also the creation of some premises for a possible opening of the Romanian educative field towards these new challenges streamed from the spiritual and social life of the community itself.

The problematic which represents the fundamental of the scientific challenge can be summarised like this:

- The attractiveness of the formal school curriculum is decreasing and it is sustained by the worrying tendency of early school leaving of pupils;
- The predominance of informational aspects in a high quantity which is not in the favour of forming life competences and abilities;
- The increasing incidence of both behavioural and psychological disorder and educational deficits at children and teenagers, and the high request of adults for therapeutical programs.
- The decreased flexibility in the mutations on the labour market facilitated by the insufficient formation of key competences which stay at the base of every job.
- The rise of the number of aggressiveness cases and conflicts between pupils or between pupils and adults at school.

Although the research had as a starting point some issues, deeds, situations existent in the Romanian educational or social system, its purpose is also to look for facts, meaning to study the possible relations and influences that social and emotional learning could have on the problematic issues mentioned above. This study is part of a more ample and qualitative research which structured its general purposes as follows:

- The identification of the level of social and emotional learning knowledge and evolution in the international context;
- The synthesizing of the innovative benefits/perspective, and also of the limits of this type of learning for the educative theory and practice;
- The presentation of the fundamental element of the social and emotional learning curriculum and their specific hypostasis;
- Leading a program of social and emotional learning used in the formal educational system from another country in order to observe the main aspects regarding the implementation, and the reactions of/effects on beneficiaries;
- The development of an action-plan to integrate the social and emotional learning in the Romanian educative practices;
- The investigation of the level of influence on the social and emotional competences of children by developing this type of programs.

To profoundly experiment and perceive the basic references of the specific social and emotional learning, we selected, from the range of available present programs, the British experience as it is one of the few which uses this type of learning on a large scale, in a formal didactical context. Thus the “Social and Emotional Aspects of Learning” Program benefits of complex support-resources, developed for every age stage and it is an initiative which is available in the English school with offers of formation for educators, too.

All the implementation procedures are developed, the harmonizing with the other school subjects and curricular initiative is provided, correlative aspects regarding the learning environment are dealt with, there is a great set of resources addressed to both children and educators and school principals. From the whole program the Blue Set was chosen, which represents the first and second school year and fits better with the children involved in the program. We have to mention that in the English system before this set, the social and emotional competences are developed through a program of formation for early education (The Red Set).

The specific objectives of this study aimed two major aspects mainly on which the whole scientific engagement was based as follows:

- The conditioning of the instructive-educational process developed in the social and emotional learning program;
- The identification of response/reaction behaviours and of products of children’s activities during the program.

2. Body

2.1. Work hypothesis

❖ **Hypothesis 1:** The program of social and emotional learning will be developed in high quality conditions from a didactical point of view;

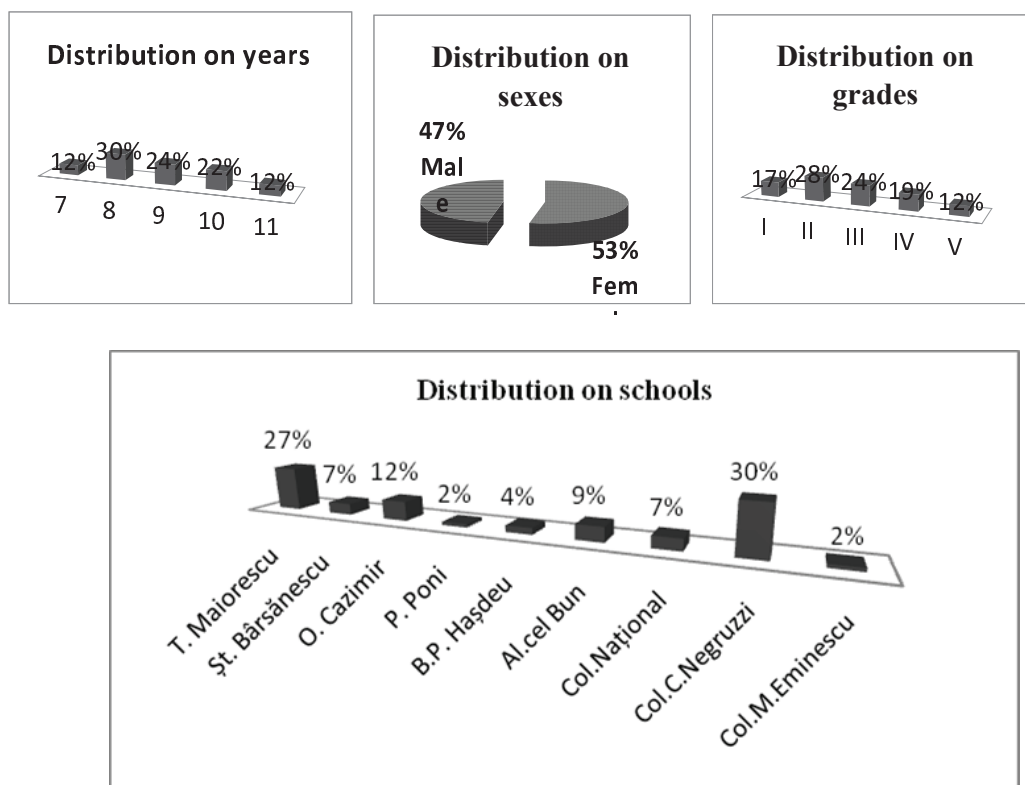
❖ **Hypothesis 2:** The chosen program of social and emotional learning can be attractive and productive from the perspective of the experiences, both for children and educators;

❖ **Hypothesis 3:** The activity of the organization will be improved from the perspective of getting to know the children, optimizing the relationships between people and the positive activity atmosphere.

2.2. The research group

The observational research was done on a group of 47 children with ages between 7-11 years old from 9 city schools (Iasi) in an environment of non formal learning at The Doxamus Resources Centre for Education and Family Association. The children attended the program partially or totally, 53% were girls and 47% were boys, they came from families with a medium towards superior education and life standard, they were primary school or 5th grade pupils from the following schools in Iasi: The National College, “Costache Negruzzi” College, “Titu Maiorescu” School, “Stefan Barsanescu” School, “Otilia Cazimir” School, “Petru Poni” School, “Bogdan Petriceicu Hasdeu” School, “Alexandru cel Bun” School, “Mihai Eminescu” College. The group was divided in 3 smaller groups of 17, 16 and 14 children; the first two groups attended the program at the same time while the third attended it afterwards after the finalisation of the first series of activity.

Figure 1. Distribution of research group after different criteria



2.3. The methodology of research

The research was done using the observation method in the Personal Development Program which took place at Doxamus Center and at the Sportive-Recreational Base for Outdoor Activities in Barnova. The duration of this program was of about a year and a half, including both the periods of school year structure and the holidays. Currently it was a weekly program (on Monday, Wednesday or Friday) between 4-5 pm, but sometimes it was followed by some games or exercises in other type of activities. During school holidays the themes were done between 2 and 3 pm of the same days.

The program was developed by following an identical translated and adapted structure of the SEAL Initiative – The Blue Set, with a doctoral candidate as instructor/observer and with two other observers (one of them is a Science of Education doctoral candidate and the other a teacher who constantly works with the group of children). The instructor/observer led the program and took observation notes during children's independent activities or immediately after their ending, and the other 2 observers did this during activities. Regularly after each activity there was a debriefing session with the observers where the most important aspects of methodology, of children's and educators' behavioural reactions were underlined. It also highlighted the utility of the future program and realistic action variants for implementation in the Romanian educational system.

If from different reasons the session could not take place immediately after activities, it was rescheduled for the same week, when time allowed so that the notes and conclusions be fresh in their minds. From this point of view the research method could be considered cvasi-mixed as it combines the semi-structured exploring observation of longitudinal type with a kind of informal focus-group of observers who shared their common conclusions and opinions. The high demands of the focus-group were overpassed by semi-structuring their discussions on themes oriented by the research objectives, but allowing though the freedom of speech for the eventual discoveries. We can assert that the post-session debriefing had been done, up to a moment, in a focus-group concentrated on collecting information and useful conclusions, and then secondarily, in a qualitative circle of problem solving or decision taking. We notice that the observation was direct, qualitative, structured on a deductive line of exploration research, developed on a longer period of time in order to lead the program both from the educators' and pupils' perspective. And here we must take into account the familiarization of the program leader with the curriculum, but also with the group dynamics, considering the fact that the approached theme focuses mostly on competences formation and less on acquiring information. Moreover, the educator who directs, transposes didactically and teaches children confronts himself with the challenge of his own values, believes, behavioural reactions and attitudes putting and effort of co-formation and restructuring together with the children.

At the beginning of the explorative research it was established an observation protocol with some pre-established reference points and with a large space of free open writing, and during the program development the initial grid was adjusted to make the writing easier as even the categories themselves became saturated. Thus we let a free

way for the manifestation of the serendipity phenomenon which allowed us note and structure unknown aspects or which skipped the initial phase of categorization or which became explicit while the social and emotional learning program was developing. An important aspect observed during the activities was the identification of the values and beliefs spread during the program and which are subordinated to the didactical contents. We must assert from the very beginning that the grid was not exhaustive, although it had been conceived in a multidimensional form. The observers were allowed a high degree of reflection by being offered the possibility to appreciate, understand, clarify, initiate and innovate in connection with their observations. A type of participant observation was chosen using the so-called technique of visible observer, but ignored as the group of children had already established security relations with the educator-observer and with the other two observers, and the notes were taken down in a discreet way, being substituted by audio-visual recording too.

We are going to present an improved form of the observation protocol as it was continuously used, mentioning that the main information regarding the method and organization of program was mainly approached in the final notes and in the debriefing sessions of the observers. This format of the observation grid is a reconstruction adapted to the needs of this research based on the transformation and reflection of various resources, among which we mention here:

- The class evaluation QAIT (acronym for Quality of Instruction, Appropriate Level of Instruction, Incentives for Learning, Use of Time) – an instrument adapted after Nesselroft and Schaffer, 2000, which appears in an American guide revised by AEL in 2004 called "Special Strategies Observation System-Revised: A Useful Tool for Educational Research and Evaluation" (Meehan & al, 2004);

- The checklist of the class environment and resources – an instrument from the same guide mentioned above;

- Checklists and observation grids of the lesson conceived by Ofsted (Office for Standards in Education, Children's Services and Skills) of the British government;

The observation protocol was organized on 3 sections in order to cover, on one hand, the formulated objectives and hypothesis, and on the other hand, to combine structured and less structured techniques of observation. Section 1 – **The general grid of the program assesment** was used as a reference for observation notes taken during each activity, but it was completed wholly at the end of each theme during the program.

OBSERVATION PROTOCOL

THE OBSERVER'S CODE:

THE OBSERVATION NUMBER:

DATE:

OBSERVATION TIMETABLE:

PLACE:

NUMBER OF PRESENT PUPILS:

THE NAME OF THE ACTIVITY (LEARNING OPPORTUNITY)

THE STRUCTURED GRID OF GENERAL ASSESMENT OF THE PROGRAM

Table 1. Aspects regarding the quality of the instructive-educational process

| No. | EVALUATED ASPECTS | ABSENT | PRESENT |
|-----|--|--------|---------|
| 1. | The organization of information in a proper way | | |
| 2. | The pointing of transition towards new topics | | |
| 3. | The use of real and explicit materials | | |
| 4. | The constant assertion of main concepts and principles | | |
| 5. | Asking open questions, allowing the necessary time to answer them and encouraging to ask them | | |
| 6. | Children's capacity of exposure using the reflection technique of the acquired subjects | | |
| 7. | Connecting the acquired theme with the former abilities and contents | | |
| 8. | Making connections between children's comprehension and their own real life experiences | | |
| 9. | Setting the objectives clearly | | |
| 10. | Setting the learning objectives and the criteria of success together with the children | | |
| 11. | Adapting instructive-educative strategies to the level of pupils' abilities | | |
| 12. | The presence of teaching styles and active, experiential, multisensory and adequate approaches to the performed learning | | |
| 13. | The use of different ways of grouping in the approaching of learning opportunities: individually, pair, small group, whole class | | |
| 14. | The grouping and mixing according to abilities were thought to maximise the learning based on reciprocal | | |

| | | | |
|-----|---|--|--|
| | strengths | | |
| 15. | The stimulation of pupils' curiosity through examples and surprising demonstrations, experimental techniques of discovery | | |
| 16. | Offering the opportunity to reflect on what they learnt and how they will put it into practice in the real life | | |
| 17. | The use of intrinsic and extrinsic rewards | | |
| 18. | The constant identification of the strong points and the next steps for improvement | | |
| 19. | The efficient use of the time allocated to teaching | | |
| 20. | The constant corrective and encouraging feedback | | |
| 21. | The teacher's regular perception of the lack of interest and understanding of the subjects by the pupils | | |
| 22. | The manifestation of enthusiasm and humour | | |
| 23. | The modelling of own social and emotional competences of the teacher | | |

Table 2. Aspects related to the attitude/reaction of children regarding the program

| No. | EVALUATED ASPECTS | ABSENT | PRESENT |
|-----|--|--------|---------|
| 1. | The pleasure to take part in activities | | |
| 2. | Active participation, enthusiastic involvement in exercises, games and reflections | | |
| 3. | The spontaneity of reactions in the developed activities | | |
| 4. | The engagement in activities both on a cognitive level and on an affective one | | |
| 5. | The presence of clues of behavioural changes, not only their verbal expression | | |
| 6. | Responsibility and the presence of the duty feeling Assumed roles in the group dynamics | | |
| 7. | Wheel in the system | | |
| 8. | Leader and initiator | | |
| 9. | Isolated and selfish initiative | | |
| 10. | Stagnant factor of activity | | |
| 11. | The collaboration and the feeling of belonging to a group | | |
| 12. | Encouraging and appreciating the others | | |
| 13. | The independence and personal trust degree in accomplishing the tasks | | |
| 14. | The manifestation of the initiative and originality in | | |

| | | | |
|-----|---|--|--|
| | approaching activities | | |
| 15. | Visible effort, expressing productivity | | |
| 16. | Focus and persistence in the task | | |
| 17. | The pride expressed in connection with the personal accomplishments | | |
| 18. | The rapidity with which they involve in the task | | |

Table 3. Aspects regarding the learning environment

| No. | EVALUATED ASPECTS | ABSENT | PRESENT |
|-----|--|--------|---------|
| 1. | Relaxed teacher-pupil relations | | |
| 2. | Creative cooperation atmosphere | | |
| 3. | The presence in pupils of the safety feeling when in a group | | |
| 4. | Self-awareness of the just and correctness atmosphere | | |
| 5. | Flexibility perception and the possibility of self-determination of the course of activities | | |
| 6. | The manifestation of humour at all the actors involved in the educational act | | |
| 7. | Reciprocal respect as human beings | | |
| 8. | The supportive environment from the perspective of self development and internal enrichment | | |
| | Physical aspects of the environment | | |
| 9. | Posting of class rules | | |
| 10. | Exhibit of the tasks/products of pupils' activities | | |
| 11. | Happy welcoming class | | |
| 12. | Distinct activity centres | | |

2.4. Findings and results

2.4.1. Considerations on results regarding the quality of the instructive-educative process

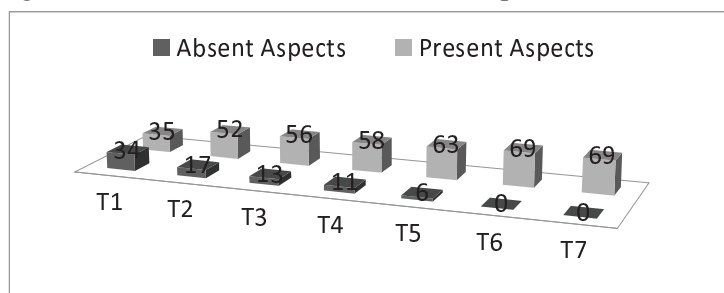
The assessments of the 3 observers were done wholly with the help of this grid, ticking ABSENT or PRESENT the aspect described for each item, cumulatively at the end of each theme of the 7 in the program.

As a general tendency we can affirm that the quality of the educative process developed in the social and emotional learning program is optimal, taking into account that the majority of the aspects mentioned in the grid were present (see the cumulative score by counting 81 Absences and 402 Presences). The weigh in percentages in what the assessment is concerned is 16.7% for Present Aspects and 83.3% for Absent Aspects. Consequently, we could state that **Hypothesis number 1** "The program of

social and emotional learning can be developed in good conditions from a didactical point of view” is confirmed by the assessments and conclusions of the observers involved in the research.

We can also observe a tendency of progress, meaning that while the program was taking place, there was a decreasing improvement of some aspects initially appreciated as being absent. This happened due to some post-activity debriefing sessions in which the observers talked about the observed aspects giving suggestions of improving the program. At the same time elements which were not under the educator’s attention during the teaching process were underlined. Being aware of them, the educator could easily direct its self-control effort and self-management of the taught lesson. The little innovative “experiments” allowed during the instructive-educative process and given by the possibility of working in groups of 3 observers was quite useful for the improvement of the educative demarches. We also state that assessing as Present/Absent was done as follows: if the aspect was not present in a variety of situations, but it appeared only isolated, at the end of the theme when the information from the grid was put together, it was noted as absent. Thus from the evaluation of Theme 1 to Themes 6, 7 we could notice an obvious improvement of the quality of the instructive-educative process.

Figure 2. Absent-Present Evolution on Topics of section 2.4.1.



This has a realistic applicability to the implementation process, demonstrating that these types of programs need piloting for a longer period of time, on different levels, working in groups of educators. This fact is useful for familiarizing educators with the contents they have to teach, for releasing of their mental and affective reconstruction in order to adjust to the psychological and axiological state needed to approach the programs of social and emotional learning. This can be a useful recommendation for the development of the mentoring period for teachers at the beginning of their career when working in teams of educators with inter-attendance at classes, inter-practice at distance or with alternative teaching represents an efficient way from an experiential point of view.

Another general conclusion is related to the specific design which the programs of social and emotional learning have, although they can go on a classical structure, their contents being adapted on the formal demands of the instructive-educative process: sequence, spiral approach, levels of practice, consolidation and continuous

improving assessments. Over this classical structure there are the inclusive, stimulating and experiential strategies, involving the pupil as partner in the didactical process, the specific values and beliefs in conditions of proper formation of the educator from a social and emotional point of view.

We also tried to classify the items from the grid following different criteria of appreciation of the instructive-educative process quality. We did this to make our effort of considering the results and conclusions easier, without thinking about this ever since the grid construction, as we wanted to offer the observers more freedom. Thus, we propose the following group of items following the aspects taken into consideration in the assessment of the quality of the instructive-educative process.

- Aspects regarding objectives: items 9, 10

In what the aspects related to the aimed objectives are concerned we have noticed that firstly we need a clear specification of them expressed through behaviours, attitudes and observable and measurable actions, which are announced to children at the beginning of the theme or lesson and eventually negotiated with them. It was difficult to accomplish this at first because of both the difficulty of materialization up to a level of behaviour/reaction of the affective and regulator processes, and the prejudice related to the children's age which allows a limited involvement of them in decision connected to learning directing and behavioural change. On the other hand, this initial clarification and understanding of the objectives by the children facilitates the reference to the results obtained at the end of the program and to the implied benefits, things which orientates the children and educators and give consistency to the program.

- Aspects regarding the content organization: items 1, 2, 4, 7

Regarding the content organization, every educator, no matter if he is a beginner or he has didactical experience, admits the necessity of this for teaching economy. There are certain details like pointing the transition to new topics and the constant re-assertion of the essential concepts and principles, which structures pupils' learning much more coherently. This is even more necessary when we talk about abstract concepts, subjective categories, attitudes and solutions to social and emotional problems. Regarding item 7, at the beginning of the program it was difficult to quantify the level of abilities, mostly the former contents, as although a certain level could have been estimated, assigning it to the children's ages, different life experiences, the learning done inside the family could have made this evaluation more difficult.

- Aspects regarding didactical strategies: items 3, 5, 6, 11, 12

It seems that the most important challenge in applying the program was the use of inclusive strategies, appropriate to the level of pupils' abilities and the use of those active techniques, with a low structuring level, with bi-direction done by the educator and children, and at the same time experiential and sensorial. For an educator who is quite compliant at the formal references given by the curricular design it is very difficult to constantly involve children in the process of personal development, to consider them partners in the study even if they are very young and allow them sometimes to orientate the activity development depending on their own requests and necessities. Respecting their own rhythm in asking question, in waiting for the best

time to answer, and also encouraging of their formulation represent exercises necessary to approach the social and emotional learning. The ability to work with inclusive strategies which imply a deep knowledge of the competences level, but also of poor dimensions, represents a step to individualised children stimulation in realising a whole, coherent and systematic educational model for each of them. As the cumulative scores related to inclusive strategies show (the report of 10 Absences to 11 Presences) it is necessary from the educator's part some deep knowledge about the group of children who he works with, but also a long process of familiarization and acquisitions in the piloting phase. This fact is demonstrated by the counting theme scores, because after Theme 5 the educator showed enough self-confidence in using these strategies. We mention that these acquisitions develop on a generous time as the end of Theme 5 took place after 22-23 weeks, meetings respectively. We should also take into consideration not only the hours worked by the children during sessions, but also the important time passed from a session to another given to planning, organizing and reflecting on personal experiences and restructuration.

- Aspects regarding class group/ organization: items 13, 14

The use of different grouping ways in approaching the learning modalities didn't represent a problem for the educator as he worked for each of the themes alternating with individual work, pair work, small group and whole class. This organizing element was possible due to the space structure where activities took place. As there were more rooms or work areas, we consider that in a regular school it would be very useful to have a special place allocated and organized for holding classes of social and emotional learning. It could have an endowment and specific design for the stimulation of acquiring social and emotional competences, organized on various workshops where children could retire when they work in pairs or in small groups. We also consider that the optimal group for developing social and emotional learning activities would be of about 15 children; consequently each class should be divided in two groups who would have to do these sessions alternatively. This would be possible in the form of the alternative development performed by each group twice a month or, more efficiently, its alternation with another object which needs a deeper/ more individualized approach, too. For example, in the primary cycle the 2 groups formed from the structure of a classroom could be alternated, participating in the same week, to 2 hours of a Foreign language and of Citizenship Education (adapted in the social and emotional leaning sense). It was even more interesting for the educator to take into account the grouping and mixing according to abilities, thus maximising learning through reciprocal support on strong points. Consequently after about 3 themes (12-13 weeks) this thing could be done in optimal conditions.

- Aspects regarding evaluation, motivation, reward: items 15, 17, 18, 20, 21

The assessment dimension of activities from the social and emotional learning program represented a turning point for the educator/observers as it implied a coherent management of rewards, the constant use of positive attitude of celebrating the results, systematic underlining of the strengths, but also registering the weaknesses which were going to be improved slowly. The scores regarding the Absent Aspects from item 15 referred to the worthy, exemplifying and relevant constructs, but with a metaphorical

cover and transposed experientially to stimulate children's curiosity. These needed a deeper practice and that is why they registered a progress in the sense of Presence at the middle of the program. Another important thing which needed an effort from the educator/ observers was observing the weak aspects individually for each child, putting it in significant learning situation in relation to his problem and highlighting when each progress occurred. And this approach has requested a time line, being also visible in the second part of the program. These dimensions were directly related to item 20 concerning the constant offering of corrective feedback and encouragement, although it had a smaller number of judgments the Absent type (4) since it was much more specific and formal compared to the other issues that became evident in a longer time. At the beginning of the program the teacher was not so used to redirect the students' attention according to the interest or level of topic understanding. So, in the debriefing sessions the observers drew out those moments, bringing them into the educator's awareness to produce self-regulation behavior and proper training.

- Aspect regarding the applicability in daily life: items 8, 16

Regarding the constant appeals to past life experiences, to everyday events during the weekly session, to the possibilities of application in future life situations, the observers felt that it was done properly during the program and especially after the initial stage of adjustment. Applicability in real everyday life was even easier as the whole social and emotional learning program exposes similar situations through stories, metaphors, examples and reflections of life. At the same time, the program requires the development of social and emotional skills in distinct steps, and which show their true measure only if expressed effectively at behavioral level in relation to other people.

- Aspects regarding time management: item 19

Time management was a factor formally considered by observers as insufficiently allocated conformable to the rigors of SEAL original program. However in the debriefing session it was highlighted that at least the first part of the program has become an "expansion" of time spent training to allow the pace of acquisitions adequacy of child and educator, as well as familiarity with the typical structure and teaching strategies. Since there were no resourceful constraints of time the three observers considered this approach appropriate, although it scored properly in comparison with the original program.

- Aspects regarding educator's personal equation: items 22, 23

As anticipated from the beginning of the program, an important aspect in teaching economy is the personal equation of the educator. This is the major feature that can make a program to be truly useful, beneficial for personal development of children or to remain a rigid curriculum, beautifully wrapped in what the rigors design of the instructive educational process means. Without the educator himself and, more importantly, policy makers and managers having been the subject of a previous training in social and emotional learning, the program will be only a suite of information, ways of solving problems, solutions which educational actors will talk about, but will have no contact with the emotional level or social context of effective integration of children. Regarding the expression on the excitement and sense of

humour (item 22), it had a positive assessment because the teacher as a structure of personality had also mobilizing and targeting energy type and often used humour as a mean of alleviating the emotionally charged situations or as a way of relieving the teaching atmosphere. Finally, it is found, even with a previous training of teachers, a personal restructuring it's happening when developing activities with children. In this respect it was quite obvious the idea of formation or rather co-training in the socio-emotional field, of both educators and educated.

We can, therefore, affirm about the quality of the educational process conducted under this program, that it is an optimal one, adequate to pedagogical principles and standards, and to the level of skills of children. Moreover, where there were sensitive issues that needed further correction or harmonization we managed to improve those issues during the program. Another summative finding concerns the need for proper time period for the rate of children development and the educators training to become converging in achieving homeostasis specific to the teaching process.

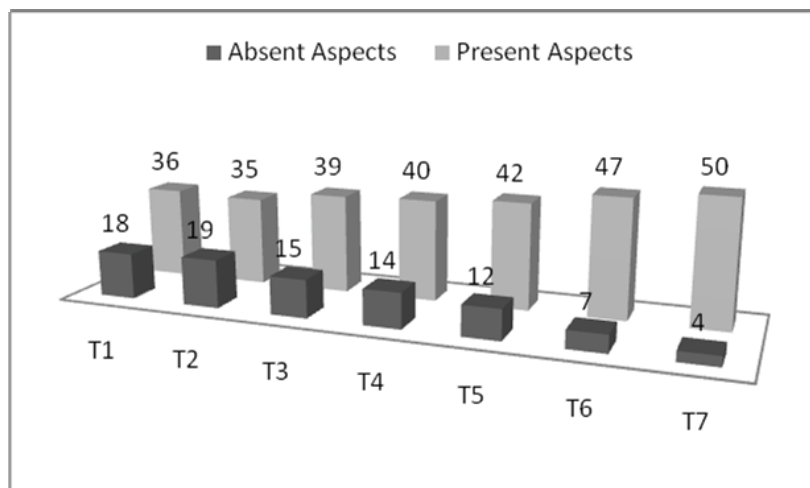
2.4.2. Considerations on the results regarding the pupils' attitude/reactions in connection with the program

Students' reactions in relation to the program are one of the most obvious beneficial aspects as the general impression created to observers was of attractiveness and innovation. Largely observers found that students were very attracted to the program, they wanted to attend it happily, and when, for various reasons they could not do it, they became frustrated. In most of the activities they actively involved, generating ideas, seeking solutions, spontaneously giving examples from life. We believe that it was quite intensified including that mixing in terms of skills, which gave them the opportunity at each of the activities to work either individually or in pairs, small group or whole class. As an overall assessment, observers agreed that social and emotional learning programs are attractive for children and may represent alternative structuring curricula that provide academic learning opportunities beyond the manifestation of the joy of learning and self-development at the same time. Thus, **Hypothesis number two** "The chosen social and emotional learning program can be particularly attractive in terms of successful experiences for children and for educators" is confirmed by the cumulative results of this research section.

This high level of attractiveness is given in our opinion by the active strategies of games, the prospect of immanent learning that finds its application in real life, in the very near future. Another explanation for the attractiveness of social and emotional learning programs could be relaxed relations of partnership type, based on mutual respect, which are very significantly in addressing issues from academic subjects in which the "relevant authority" is still the teacher. Life problems, solutions to difficult situations, the proper atmosphere of self-developing makes out of this programs modalities of inter-learning in which the educational actors exchange roles, can be as "experts" in an issue, since it is part of their own personal and social lives. This fact is illustrated by appreciating item 1 "The pleasure to participate in activities" with assessing as Present at each topic from the beginning to the end of the program.

At the other items, except for those from 7 to 10, we found the same trend of progression recorded on the base of children evolution through self-training showing beyond the visible, superficial aspects connected with attractiveness, a continuous effort of self-development.

Figure 3. Absent-Present Evolution on Topics of section 2.4.2.



Thus, the engagement in tasks passed from the manifestation at a cognitive level at the beginning of the program and emotional reactions, to the whole mobilization in the activities. Within this general trend, the slowest changes can be seen in the visible changes at behavior level and of those that require more acquisitions to prove the independence and personal confidence. Thus, item 5 on the presence of cues behavioral change, has a score of 11 Absent to 10 Present, most assessments of the Present type now being accumulated in the second half of the program. Also, the item regarding the level of independence and personal confidence in tasks more strongly manifested after running a good part of the program, receiving a score of 10 Absent and 11 Present. Item 6 (responsibility and sense of duty) and item 16 (concentration and persistence in the task) were appreciated and have to be analyzed taking into account children's very early age (7-10 years old), and these are acquisitions that require a high enough socio-emotional maturity. Item 12 which targeted the dimensions expressed in behavior, of encouragement and appreciation of the others requires more exercise ran throughout the program to overcome some manifestations specific for Romanian society, rather oriented towards competition and the appreciation of elites than the empathic conducts and respect for the other person's value.

A particular situation was set up by items 7-10 on roles in group dynamics, which was identified from the findings of the three observers who had typical character rather than the expression level or degree of intensity. Consequently, they have been unanimously acclaimed as being Present in the group in all 7 themes. We affirm once

again that observers assessing summative, have found the issues, related to items that were most representative for the group and not only isolated, as being present.

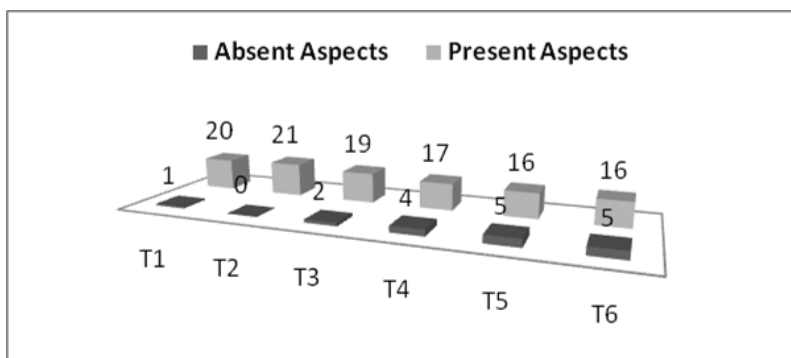
As a general consideration on the attitude of students toward social and emotional learning program, we highlight the attractiveness showed through the pleasure and commitment in activities, the spontaneity and speed of potential mobilization and medium-term manifestation of the profound changes in affective and behavioral level. Similarly, educators and educated acquired a sense of personal satisfaction and safety of self-development on a route whose construction stood at their discretion.

2.4.3. Considerations on the results regarding the learning environment

From the perspective of this analysis of the social and emotional learning program developed, it seems that the learning environment was the highest-rated, which is influenced by the expectations of the educational actors who knew from the very beginning the character of the program and the releasing from academic learning rigidity. We can say that the **Hypothesis number 3** of the research "The activity of the organization will be improved in terms of children's knowledge, of optimizing inter-human relationships and positive work atmosphere" is confirmed by the assessments of observers.

Of course, at the beginning of the program there were still processes of mutual accommodation between the teacher and children, by altering the boundaries of permissiveness and positioning one educative entity towards the other. From the educator observer's point of view, this effort of loosing relationships, of creating a sense of belonging and partnership, was a pretty long one because with the vast majority of participants had entered in previous relationships, specific for academic learning. It was therefore necessary to develop a process of setting limits, of clarifying the vision and program management arrangements for the program to be marked by profound changes in the personality of students and educators. Of course, all these findings focus on the same tendency of progressive acquisitions together with a long term development of the program.

Figure 4. Absent-Present Evolution on Topics of section 2.4.3.



From the beginning the creative atmosphere of cooperation and relaxed teacher-student relations were obvious and appreciated with a maximum score of Presence of 21 and 20 points. Clarifications and stages of awareness of supportive environment based on principles of fairness, required an optimal time to be present in the majority of group members (compared to 2-19 for the Absent, Present). The development of children's sense of safety in group is something which takes time as it involves elements of personal trust, practicing successful learning situations that do not affect their self-image negatively, that is why has become more evident from Theme 5. The belief that the program is quite flexible and the children can be at the same time influencing factors in terms of self-determination occurred in the first part of the program and was absent in the first theme, so children could perceive their contribution as being an important one.

A greater number of Absent assessments (although they represent a low score in all assessments of all sections) was awarded to items 6 and 7. In our opinion, showing humour cannot be fully present as it is a feature related to the personality of each individual, the optimistic view on life and the social context in which each person is formed. Of course that while assessing the program all observers have appreciated the humour as a representative factor of a climate conducive to inner enrichment. Regarding item 7, "Reciprocal respect as human beings", we believe that it represents an acquisition feasible in different stages and on a long-term, meaning that although children tend to conform to rules and social convenience in relationship with others, at the base of any learning there is the fundamental respect "stripped" of qualities and personal characteristics. It is obvious the tendency of criticizing the actions and reactions of their fellow, mostly of those with certain vulnerabilities, the strongly present competition in the education system (see the explosion of school competitions on various themes, the variety of tests and classifications), but also in the Romanian society as a whole.

A clear place in the appreciation of learning environment was given to the physical aspects, as they are quite well appreciated (items 9, 10 and 11 with maximum score) and as the endowment of space of the program had been done before the beginning of the program. On the other hand, posting group rules and students' product activities has been done constantly ever since the first activities. After the first theme, we noticed the need of separate centers of activity, either for group or paired exercises, or for conducting a certain type of activity (the relaxation and meditation corner, the friends' corner, the corner for solving problems).

In conclusion, we must say that the creative relaxing atmosphere based on mutual trust and cooperation is one of the biggest benefits of social and emotional learning programs and maybe a necessary change of perspective of the Romanian school in which all the participants in the educational act (adults and children) to feel satisfaction and personal fulfilment in everyday life. This would improve the school management more widely, transferring to both the entire teaching staff and support staff, and to the decisions made on behalf of the organization optimal performing.

3. Conclusions and recommendations

After piloting the "Social and Emotional Aspects of Learning" Program - The Blue set on a group of children in Romania, a number of conclusions and pragmatic findings, used in educational policy, on the integration of such initiatives in schools in our country, have emerged. We will present all these considerations concisely in the hope that they could be inspirational elements for interested practitioners or researchers who would like to capture the specific design of social and emotional learning programs from different angles.

- Social and emotional learning programs require a high quality level of the instructional process as it involves children in the act of learning directly, making them become more active by the chosen strategies, allowing the creation and structuring contents, valuing them as complex personalities with all their character traits. It is quite relevant the efficiency of programs in the sense of supervising the informational transfer to behavioral acts involving emotional life, so that these will be more evident in a short time in real life.

- The teaching process carried out in such programs is very attractive and enjoyable for children; they participated with their entire being to practice social and emotional acquisitions because they can act roles and assume different responsibilities, not just the one of a good student from an academic point of view.

- The teachers who lead these programs are „blessed” with the revelation of the discovery of pupils’ personality in a natural way, showing their strong and weak points to require in one way or another the celebration of some of them and the development of other.

- The development of the modules has positive effects on the climate specific for the teaching environment, lowering the tension in the critical moments, releasing anxieties, allowing the presence of an atmosphere based on trust, reciprocal respect and sometimes having humorous moments.

- In our opinion, the success of a social and emotional learning program is conditioned by the training started from an early age and constant continuing during school life, with a long term effort to obtain efficient and consistent results.

- Teachers are the key in the educational demarche specific to the educational and emotional learning (confirming the proverb "Man holy place") and it is vital for them to be mature from a personal point of view, to be supporting factors for child development. Moreover, all the actors of education should also undergo this kind of personal development modules: school managers and policy makers together with all staff, including those administrative ones).

- The process of program implementation has to be conceived as a long-term one, having certain levels before its piloting, focusing on efficient promoting, identifying needs that will be met and "impregnation" of all decision factors with the benefits of social and emotional learning to represent key levers to support approaches.

- To have a greater probability of being integrated in the Romanian educational system, social and emotional learning should overlap Counselling Curricular Area for several reasons: it can use existing human resources with adequate

training in this area, there are already hours allocated in the curriculum, has several items of reference content (even if they focus on aspects of information), so it requires less financial means. At the same time school counsellors will also acquire effective teaching status, proving to be helpful and involved in all aspects of organizational life in a school.

- To be addressed in a professional manner, programs should provide all pre-designed sets of teaching materials, prepared and designed to be used in activities with children.

- Social and emotional learning programs should be very present in school, meaning that all human resource should be aware of the benefits, make use of the knowledge clues in their own activity as this is a way of challenging innovation in organization.

- The preventive perspective that the social and emotional learning has, allows further action on a broad set of deficient issues, from the lower level of pre-morbid state to a much lower reference of psychological and psychiatric services, to easier social integration, by acquiring various instruments used in a variety of situations.

- It can also be provided the alternation of difficult academic materials and sometimes unattractive with more enjoyable activities, loaded with acquisitions easily identifiable in everyday life and versatile in terms of used strategies.

- Another interesting thing to note is the holistic, systemic perspective on the child, and the school institution as a whole too, produced by the collaboration between staff, levels of decision, constitutive elements of the instructive-educative process, while integrating all preventive interventions from school.

- Alternative teaching by separating the two working groups of class is recommended and also facilitating the work in groups of teachers by inter-assistance procedures, inter-teaching and mutual assistance for the teaching process to gain consistency and depth.

- Assessment will not be done through grades or ratings, but through personal development portfolios, through the products of activities and accomplishments and through registering the behavioural changes in other social contexts to which the teacher has access.

- Social and emotional learning programs aim at ethical issues regarding privacy, security relations in the group and avoiding situations of discrimination, so the involved teachers should approach these issues by defining the limits and available references in the training programs.

- Last but not least, social and emotional skills training at students represents a benefit which meets the employers requirements present in the labour market in terms of skills required qualifications beyond school, such as teamwork, the ability of innovation and initiative, the responsibility and flexibility in accomplishing tasks.

4. Acknowledgements

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DESIGNING AND USING INTELLIGENCE AND MEMORY ACTIVATING BOXES (IMABs) AS INSTRUCTIONAL MATERIALS FOR EFFECTIVE INSTRUCTIONS IN SCIENCE AND TECHNOLOGY CLASSROOMS AND LABORATORIES

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Abstract: The paper explains what Intelligence and Memory Activating Box is (IMAB) and opines that several of such boxes can be employed as Academic Learning Materials (ALMs) by teachers during their teaching to deliver effective lessons to learners at the primary and secondary levels (Grades 1- 12 levels) who should in turn utilize them to study/learn. These boxes can be designed and utilized by teachers and learners alike to provoke interests and motivated to perform well and achieve better in their academic endeavours. The paper also outlined steps for the preparation of lessons that can be used to feed concept envelopes and cards into several of such boxes and went on to outlined steps on how the different IMABs can be designed. It also pointed out how such ALMs should be used by teachers and learners alike.

Keywords: Intelligence, Memory, activating, individualized/cooperative learning, etc.

Introduction

Encyclopaedia Britannica (2011) defines intelligence as “mental quality that consists of the abilities to learn from experience, adapt to new situations, understand and handle abstract concepts, and use knowledge to manipulate one’s environment”; and memory as “the encoding, storage, and retrieval in the human mind of past experiences.” According to Okebukola 2002.39, “our intelligence therefore is our singular, collective ability to act and react in an ever-changing world”. The time to utilize this ability is now, considering the fact that societies of the world are conglomerating to form a global village as a result of the advent of Information and Communications Technology (ICT) and other gadgets. For teachers and learners alike to interact effectively to promote good performances and achievements in school science subjects during teaching and learning in this technological age; the activation of their intelligences and memories using effective and viable instructional materials is necessary. Based on the foregoing, teachers can prepare their lessons to accommodate sessions of interactions that should help to develop in learners the abilities to learn science subjects on individual or cooperative bases whether they are in the classrooms

or not. These sessions can be in form of teacher and learners' interactions in practical or demonstrations in the classrooms and laboratories or playing in small groups outside the classrooms and laboratories among learners.

On the other hand, for learning to continue among learners within the school hours or at their homes, Intelligence and Memory Activating Materials (IMAMs) can be designed by teachers and released to them to use either during their study periods or playing sessions. One of such materials is what this paper titles "Intelligence and Memory Activating Boxes" -IMABs (Pollyn and Teetito 2011. This box can be designed by both teachers and learners and be utilized vice versa during teaching, individualized or cooperative learning/interaction or be kept at the corner of the classroom or laboratory as reference boxes where learners can visit and make references to. Several of such boxes in form of square or rectangle can be designed and used to create science and technology corners in the classrooms or laboratories for learners to visit at their convenience to activate their intelligences and memories so as to perform well in their assignments, tests and examinations.

The contents of IMAB can be prepared based on the main concepts that can be pasted on the surfaces of the boxes. It is expected that IMABs when designed properly by teachers and after using them for effective delivery of lessons, learners can utilize these boxes by opening and studying the sub-concepts contained in them; which are systematically arranged to give the formal knowledge they need to perform well in their classroom activities to achieve better in the different subjects they offer in schools. This paper is advocating the designing and use of IMABs by teachers and learners to help them increase their capacities to learn individually or cooperatively within or outside their classrooms and laboratories whether the teacher is there or not..

Learning with IMAB

Since learning does not have limitation in life but begins from cradle to grave, academic learning has systematized it such that learners can qualitatively, meaningfully and fruitfully acquire scientific knowledge, skills and attitudes in order to proffer solutions to their personal and societal problems of life which are emerging as a result of scientific and technological advancement of societies. Consequently, academic lessons normally are designed systematically according to subjects from the curriculum, syllabi or schemes of work. It is with this notion that this paper is proposing the designing of IMABs by teachers. Learners can utilize these to (empower their capacities) activate their intelligences and memories for the sake of lifelong learning, self improvement and self- reliance. The power to think as well and act intelligently is in every individual where an enabling environment is put in place; in this case provision of Academic Learning Materials ALMs or Intelligence and Memory Activating Materials (IMAMs) and games that are needed to encourage teaching and learning. According to Professor Howard Gardner cited by Okebukola 2002, and Pollyn and Teetito 20011, "all humans have multiple intelligences. These multiple intelligences can be nurtured and strengthened, or ignored and weakened". Gardner believes that each individual has nine intelligences which include:

- Verbal-linguistic intelligence.

- Mathematical- logical intelligence.
- Musical intelligence.
- Visual-spatial intelligence.
- Bodily-kinaesthetic intelligence.
- Interpersonal intelligence.
- Intrapersonal intelligence.
- Naturalist intelligence and
- Existential intelligence.

Through painstaking efforts which are described in one word as “picolizing” or picology by Pollyn 2004, teachers can adopt strategies that would enable them to prepare and present effective lessons in their classrooms and laboratories. They can design appropriate learning materials for learners to utilize at their convenience to empower their capacities to achieve in their specific subject areas. IMAB is an academic learning material that depicts a slogan and a plea: “Do it yourself in the proper way”. This plea goes to both teachers and learners alike. In preparing their lessons therefore, teachers are enjoined to think and reason systematically about the topics to be taught, work hard to design and produce lessons and materials that should be able to invoke learners’ interests and motivate them to utilize their intellects through active participations within and outside their classrooms or laboratories.

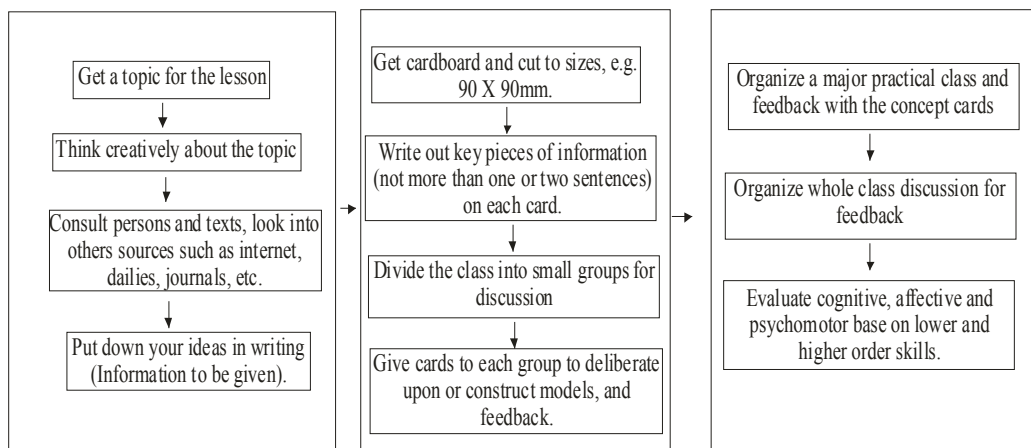
Nature of IMAB

Intelligence and Memory Activating Box (IMAB) is a box that can be designed by teachers and used to teach different concepts in art, sciences, technology, engineering and mathematics in ideally organized manners. In the lessons to be learnt with IMABs, there should be opportunities for learners to display their verbal-linguistic intelligence such as talking and making contributions in the class or playing games in small groups; display their mathematical- logical intelligence by solving problems where necessary; display their musical intelligence where necessary by singing and composing songs with the sub concepts in the lessons; display their visual-spatial intelligence by constructing and drawing objects and so on. Through these ways, the operational word for designing and using IMABs is proposed as “picolize” (Pollyn 2004). When people picolize, they are performing activities in the right direction based on the topic at hand which will lead to Right Teaching, Right Learning and Right Living; also referred to as 3RTLL (Pollyn and Wokocha 2008). The designing and uses of IMABs are ways of picolizing to bring about proper conceptualization in teachers and learners, innovations into teaching, efficiency and productivity into teaching and learning in the education industries.

Picolizing the lesson to produce an IMAB

The following steps put forward by Pollyn 2000 can be used to bring about activity-based lessons in the classrooms or laboratories. The lessons can be made into concept cards that can be introduced in constructed boxes to be used by learners.

1. Producing a lesson



2. Steps in designing an IMAB based on the particular lesson produced

1. Take measurements of 90mm by 90mm (less or more lengths) and cut out six or two pieces of equal sizes of cardboard.
2. Join the pieces using glue to produce a square or rectangular box.
3. Paste pictures/diagrams (chart) of the concepts under study on the six surfaces of the square box or on the upper surface of the rectangular box produced.
4. Fill the box with instructions/notes on the main concept in three envelopes and label them as simple, medium and hard.
5. Place the box in a corner where it can be viewed and used to teach or learn.
6. Pick up one envelop e.g. simple and teach with it. You may pronounce the word on each card correctly and expect learners to do same or ask individual learners to suggest methods of using each envelop. They can also do this cooperatively both in the school hours and at home.
7. Release the box to learners to use even when you are not in the classroom with them.
8. Finally, ask learners to produce similar boxes on different topics at school or home and use them to learn at their free periods.

Sources of IMABs and contents

The National Policy on Education (NPE 2004) in its philosophy and goals of education in Nigeria outlines the five main national goals for Nigeria upon which education is founded and every lesson delivered in the classroom becomes a building block for such educational foundation. These goals are as follow:

- (a) a free and democratic society;
- (b) a just and egalitarian society;
- (c) a united, strong and egalitarian society;
- (d) A great and dynamic nation;
- (e) A land full of bright opportunities for all citizens

The same document also has the objectives and subjects for every starter of the education system. With particular reference to the primary and secondary subjects outlined in it (National Policy on Education, NPE 2004), Intelligence and Memory Activating Boxes (IMABs) can be designed and utilized to bring about effective teaching and learning especially at the primary and secondary school levels. Other sources from where IMABs can be prepared from include the national curricula and syllabi, schemes of work and individual textbooks. In the designing and preparing the contents of IMABs, concepts or topics should be broken down to sub-concepts or sub-topics from simple to complex manners. On the other hand, the contents of IMABs can be made up of sub-concepts and sub-topics treated in the previous lessons. This box can then be made available for learners to reach and utilize at their convenience to activate their intelligences and memories based on the lessons they have learnt. A typical scheme of work from where several IMABs can be designed is captured from the science Teachers Association of Nigeria (STAN 2011) schedule of national workshops as follow:

SENIOR SECONDARY BIOLOGY

COURSE CODE: STAN BIO 301

MODULE 1:

COURS TITLE: BIOLOGY AND LIVING THINGS

COURSE UNIT: UNIT 3: ORGANIZATIONS OF LIFE

COURSE CONTENT/DESCRIPTION

1. Levels of organization of life.
2. Cell (Euglena, paramecium).
3. Tissue (hydra).
4. Organ (onion bulb).
5. System (bird, man).

NOTE: What is expected to be done with the above scheme has been explained above, BUT STILL, see some examples below.

Producing the contents of IMABs

Formulate statements, questions and tentative answers on concept cards and introduce them into envelopes to be placed in the boxes; for instance:

A. Levels of organization of life- explaining the main concept of the lesson first. Note: This lesson was prepared and presented at STAN Biology Panel workshop by Pollyn and Teetito 2011.

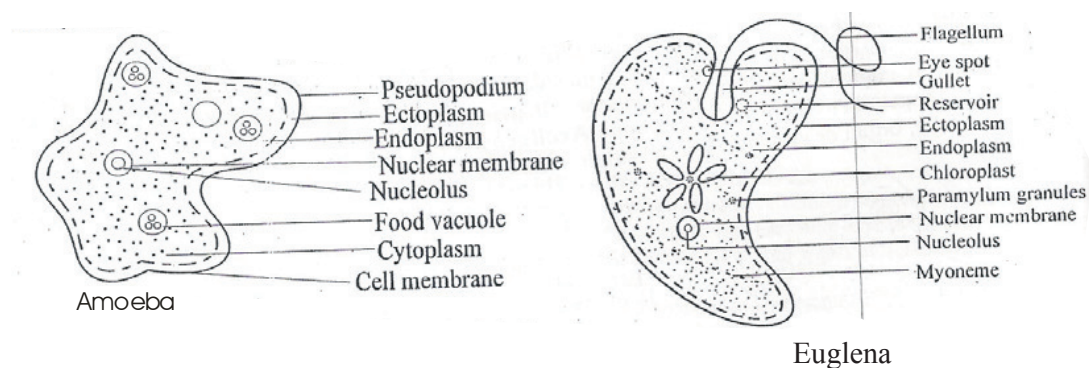
A. 1. Levels of organisation of life

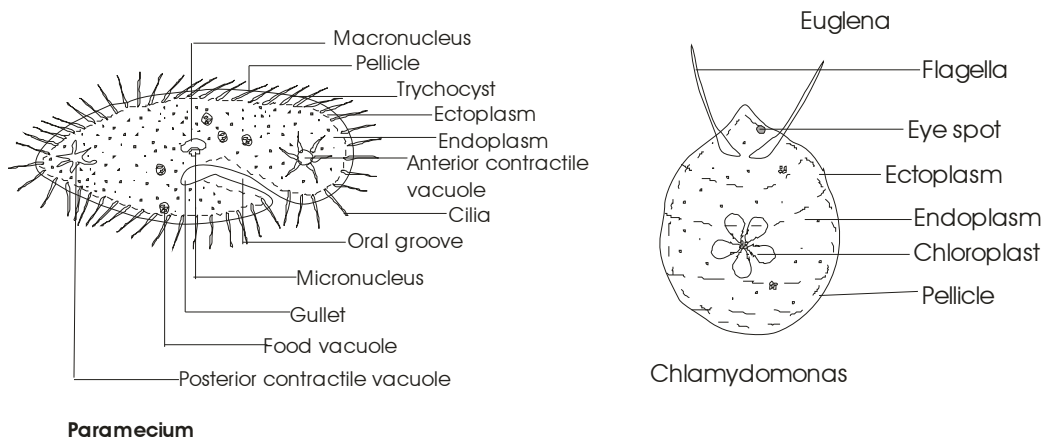
Organization of life is the manner in which life exists from simple to complex forms within the environment generally called Earth. Life in living things is organised in form of cell, tissue, organs and systems. Living things exist in each of these levels or categories. Living things that exist at the cellular level are called single-celled-organisms, e.g. Virus, Bacteria, Amoeba, Paramecium, Euglena and Chlamydomonas. Those that exist in more than one or more cellular associations are referred to as simple multi-cellular organisms, e.g. Spirogyra, volvox, hydra, jelly fish; While those

organisms that contain several cells, tissues, organs and systems are referred to as complex cellular organisms, e.g. plants and animals. Organisms in each of these levels are called living things because they possess life. Biologically speaking, life is described in seven series of events or broad activities which also indicate the presence of life in all living things. These activities also are known as characteristics of living things. They are carried out with corresponding characteristic features present in the living things according to their levels. For instance, organelles make up the characteristic features of single celled and simple multi-cellular organisms. Multi-cellular and complex cellular organisms have tissues, organs and systems as their characteristic features which include internal and external appendages. Level of organization is studied in the categories of cells, tissues, organ and systems (Pollyn 2005).

The cell: Cell is the basic, structural and functional unit of life. A cell is a unit of life in all living things because it performs basically all the characteristics of life performed by all living things such as nutrition, irritability, reproduction, growth, excretion, respiration and movement. There are free-living (independent) single-celled organisms such as bacteria, amoeba, paramecium, euglena and chlamydomonas found in stagnant water and watery and dirty environments. There are also non-free (non-independent cells) which are found in all living things, in this case, cells are building blocks of living things that exist as simple multi-cellular or complex cellular organisms. There are basically two types of cells; prokaryotic and eukaryotic cells. Plant and animal cells are examples of eukaryotic cells. They can be studied to find out or describe the differences between prokaryotic or eukaryotic cells or plants and animals. There are differences also between prokaryotic and eukaryotic cells.

Information in bits, for instance, differences in the characteristic features of organisms can be described by way of asking and answering questions on concept cards and be introduced into envelopes which can be placed in a constructed IMAB for learners to reach and use to study or play games with at their convenience. Labelled examples of free-living single-celled organisms are shown below. The organelles as well as their functions can be used to prepare concept cards.



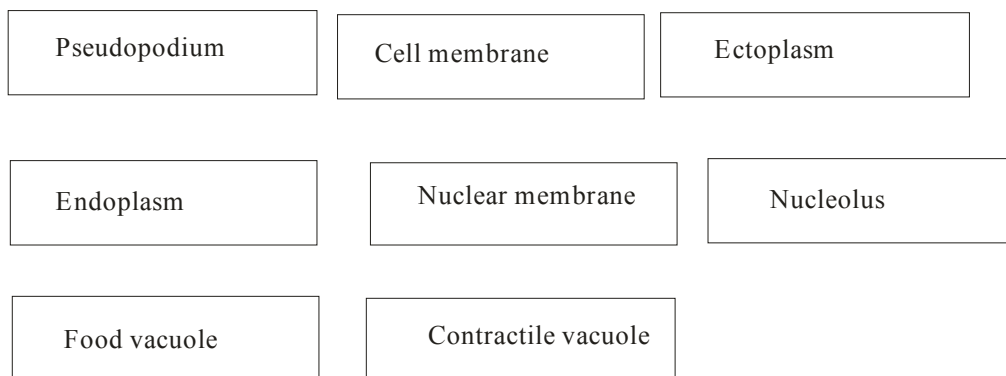


Source: Polly 2005.

A.2. Designing an IMAB with the above diagrams in three stages can be done as follow:

1. Steps for the Simple level

1. Create envelopes with each of the diagrams pasted, e.g. amoeba on their upper surfaces.
2. Write out all the organelles of the particular organism on pieces of cardboard paper (concept cards) and introduce these accordingly into each envelop containing the diagram of the particular organism.
3. Also, write out the characteristics of the organism and introduce into same envelop.
4. Label each envelop as simple or easy level on the opposite surface of the envelop.
5. Introduce these envelopes containing the cards into the box.
6. Use this level to present the rudimentary information about the organisms to be presented to the learners about the first level of organization of life; e.g. organelles in Amoeba are pseudopodia, cell membrane, nucleus, etc. See example below.



2. Steps for the medium level

1. Write out each of the organelles and their functions on pieces of cardboard papers
2. Introduce these concept cards into another envelop bearing the particular diagrams of the organisms.
3. Introduce these also into the box, e.g. pseudopodia/cell membrane

Note: In this stage, the sub-concept being presented is briefly explained to allow learners to comprehend the lesson in bits. An example is given below.

| | | |
|---|--|--|
| <p>Pseudopodia: Pseudopodia are movement appendages in amoeba which the organism uses for movement. These are false feet the organism extends to capture its prey and uses as food. In capturing its prey, amoeba extends two pseudopodia at the direction of the prey and tactically engulfs it with a little drop of water with which it digests it. After capturing the prey as food, amoeba can move away from the scene by extending pseudopodia in another direction. This is why the shape of amoeba is not constant.</p> | <p>Ectoplasm: This is the part of amoeba directly attached to the cell membrane. It is part of the cytoplasm but is very light in nature because none of the organelles is suspended in it.</p> | <p>Endoplasm: this is the part of the organism amoeba that is directly associated with the ectoplasm. This part is very dense because it contains the organelles that perform other functions in the organism. It is the endoplasm and the ectoplasm that form the cytoplasm of the organism.</p> |
|---|--|--|

3. Steps for hard level

1. Broaden the explanation of the concepts started at the medium level in relation to other concepts on another concept card, e.g. pseudopodium/cell membrane.
2. Introduce the cards into a different set of envelopes labelled hard with diagram of the organism on one of the surfaces.
3. Put these envelopes with the cards into a constructed IMAB.
4. Teach with each envelope or leave the box with the learners to operate during their learning process.

Note: In this stage, the concept being presented is broadly explained to include some physiology and mathematical implications where necessary to convey proper understanding of the meaning and structure of the concept under study. An example is given below.

| |
|--|
| <p>Pseudopodium/cell membrane: a pseudopodium is an extension of the cell membrane which is made up of a single protein layer found in between double lipid layers which contain phospholipid, cholesterol and glycolipid molecules that form chains of fatty acid that determines whether a membrane is formed into a flat sheet or round vesicles. The fatty acid chains allow many small, fat-soluble molecules, such as oxygen, to permeate the membrane, but they repel large, water-soluble molecules, such as a sugar, and electrically charged ions, such as calcium (see cell membrane in Encyclopaedia Britannica 2011). The single protein layer in between the lipid layers allows the transport of ions and water-soluble molecules across the membrane. The presence of both lipid and protein layers contributes to the flexibility of the cell membrane. This can be the reason why amoeba can extend and withdraw its pseudopodia at random.</p> |
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Conclusion and Recommendations

Intelligence and Memory Activating Box (IMAB) is an Academic Learning Material (ALM) necessary for all learners at the primary and secondary school levels. What the learners are expected to do in the utilization of IMABs and their contents is to pick concept cards from the box and read out or study to activate their intelligences and memories in order to perform well in their achievement tests which could be assignments, tests or examinations. Procurement of IMABs is the responsibility of parents and the government, while it's designing and utilization are the responsibilities of teachers and learners.

Delivery of adequate and effective lessons in the classrooms and laboratories is not in much talking but in the production of interactive materials that will provoke learners' intelligences, memories, and interests as well as their motivation to perform well in their academic endeavours, therefore the production of IMABs should be adequately sponsored by government and associations, and be utilized by teachers and learners.

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EMERGING MYTHS AND REALITIES IN TEACHING AND LEARNING

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Abstract

One of the key points in Late President Yar'adua's 7- point agenda is the accomplishment of qualitative and functional Education. This can be monitored through assessing academic achievement of students. Chemistry Education occupies a central position to all disciplines. This study examined the correlates between age and gender on academic achievement (CGPA) of Chemistry students. The study used thirty six (36) females and forty (40) males giving a total of sample seventy eight (76). Scatter – plot, mean and standard deviation were used for the descriptive statistics while univariate analysis of variance (ANOVA) and multiple regression were used for inferential statistics. T-test was used to test the null hypothesis formulated ($P < 0.05$). Result revealed a linear relationship between, age-CGPA and gender-CGPA. A low positive correlation coefficients was obtained for ages and gender ($r = 0.006$ and 0.105) which were not significant. The predictor variables jointly accounted for 1.1% of the variance, age was the better predictor. The null hypothesis tested was accepted implying no significant difference in academic achievements of students. It was suggested that some more variables be included so as to determine significant correlation of students' academic achievement of Chemistry students.

Introduction

On assumption of office on May 29th 2007, late President Musa Yar'adua met a nation with vital infrastructure such as roads, power, water etc in comatose state, while key sectors such as manufacturing, agriculture, education and transport were floundering (Ochiama, 2008). It was against this background that the president unveiled a 7-point agenda which he hoped would put back the economy on track. In his inaugural speech, late Yar'adua had said that his administration would focus “on accelerating economic and other reforms in a way that makes a concrete and visible difference to ordinary people”. These, he said are the kernel of what has come to be known as the President's economic blueprint. He enumerated the seven point agenda as: power and energy; food security and agriculture; wealth creation and employment; mass transportation, land reforms; security; qualitative and functional education and pursuance of the rule of law. Qualitative and functional education at all levels of education has been the clamour for educational policy makers since time immemorial.

Chemistry occupies a pivotal position in Science and Technology and is needed by everybody and in every aspect of human endeavour (Agwagah and Harbor-Peters, 1994; Akinsola, Tella and Tella, 2007; Olayemi, 2009; Abubakar & Eze, 2010; and Abubakar and Uboh, 2010; Ejimaji and Abubakar, 2010). Since Chemistry education is

a compulsory subject in engineering and allied courses for tertiary education, then, there is need for a qualitative and functional Chemistry education to be in place as one of the fulfilment of the 7-point agenda of the Federal Government.

Quisumbing in (Acceladjo, 2004) mentioned that true test of quality education is the degree to which one can share what he has learnt with others to improve the quality of life. Qualitative and functional Chemistry education can be evident in the academic achievement of students emphasising their cognitive level. This now brings us to the issue of academic achievement in chemistry. Agwagah and Harbor-Peters (1994) reported that gender related differences existed in Chemistry learning and achievement. Busch (1995) reported that female students have significantly lower self-efficacy than males with respect to Chemistry related and other traditionally male dominated subjects including computer. Other researches on inter-relationship of gender and Chemistry have reported no significant gender influence on achievement in Chemistry. Agwagah and Harbor-Peters (1994) have reported that little differences are identified between males and females in Chemistry achievement at ages 9 through 13 years but at age 17, females perform poorer than the males. Tenzin (2002) reported that younger students out performed their peers in Chemistry, English, HCG, Science and overall scores while older students achieved at a higher level than the younger ones.

Hence, this current study is designed to assess the significant relationship of both gender and age on academic achievement of Chemistry students of the Federal College of Education (Technical), Omoku, Rivers State. Specifically, it will ascertain which variable gives a better percentage of variance to the academic achievement of the students.

Statement of the problem

The late President Yar'adua's 7-point agenda is to build on the greatest accomplishments of the past few years, concentrate on rebuilding our physical infrastructure and human capital in order to take our country forward. Development of human capital is a strong tool for a Nation's growth. A qualitative and functional education is an essential ingredient to rebuild human capital in a Nation. Chemistry education stands central to all courses, hence the all important need to focus on the quality of Education which is evident in the academic achievements of students. Several factors affect academic achievements, they include gender and age. So, the problems are how the effect of these two variables: age and gender contribute to the academic achievement of chemistry students?

Purpose of the study

The purpose of this study was to determine if there were significant relationships and contributory effect of the gender and the age on the academic achievement of Chemistry student. Also, the effect of gender on academic achievement in Chemistry was ascertained.

Research Questions

1. Are there any relationship between gender age and achievement of Chemistry students?
2. What is the individual contribution of each of the two predictor variables: gender and age to student's performance?

3. What is the combined contribution of the two predictor variable to students' academic in Chemistry?

Research Hypothesis

H₀₁: There is no statistical significant difference in the academic performance of female and male Chemistry students of F.C.E. (Tech.), Omoku in 2007/08 session.

Methods

Population and Sample

The population of this study comprised all the chemistry students in the School of Science at the Federal College of Education (Technical), Omoku, Rivers State. From the population, the academic session of 2007/08 was used for this study. The sample consists of seventy-six (76) students made up of forty (40) males and thirty-six (36) females spanning NCE 1, 11, and 111 academic levels.

Materials / Data collection

The college approved cumulative grade point average CGPA result that reflects the overall academic performance for the session for each student was obtained from the records of the chemistry department. Each student's age and gender were obtained from the School of Science Education records and the admissions unit of the college.

Procedure and Data Analysis

The gender, age and CGPA of each student were entered into a database. The statistical package SPSS was used for the comparative analysis. Mean, standard deviation and scatter plot were utilised for the descriptive statistics. Inferential statistics was established using bivariate correlation, univariate analysis of variance (ANOVA), t-test and multiple regression analysis. The scatter plot of the variables revealed a linear relationship, hence Pearson correlation was used to determine the significance of the relationship of age – CGPA and between gender-CGPA. T-test was used to test the hypothesis formulated for the study level of statistical significance was set at $\alpha = 0.05$

Results

Results are as presented below

Research Question 1

Are there any relationships between gender age and academic achievement in Chemistry?

Table 1: Correlation matrix of age, gender and CGPA

| Variables | CGPA | Age | Gender |
|-----------|-------|-------|--------|
| CGPA | 1 | | |
| Age | 0.006 | 1 | |
| Gender | 0.104 | 0.015 | 1 |

Result from Table 1 revealed that both Age and Gender correlated positively with CGPA, hence they both have predictive validity on CGPA. The correlation coefficients however, were not significant.

Research Question 2

What is the individual contribution of each of the two predictor variables: gender and age to student's performance and which variable most significantly affect their CGPA?

Table 2: Percentage contribution of Age, Gender on CGPA

| | Age | Gender |
|-----------------------------|-------|--------|
| R - (R) | 0.006 | 0.105 |
| R- square (R ²) | 0.000 | 0.011 |
| % Contributed | 0.000 | 1.100 |

Table 2 revealed that Age contributed only 0 % to the variance observed in CGPA while Gender contributed 1.1%

Table 3: Relative contributions of each of the variables and their significance

| Variables | Standard Error | beta values | t | Significance |
|-----------|----------------|-------------|-------|--------------|
| Age | 0.021 | 0.004 | 0.035 | 0.972 |
| Gender | 0.204 | 0.105 | 0.900 | 0.371 |

Research Question 3

What is the combined contribution of the two predictor variable to students' academic achievement in Chemistry?

Table 4: Summary of the Multiple Regression Analysis ANOVA^b

| Multiple R=0.105 R square = 0.011 Adjusted R square = 0.016 Standard error of estimate = 0.80718 | | | | | |
|---|---------------|----|-------------|-------|--------------------|
| model | Sum of square | df | Mean square | F | Significance |
| Regression | 0.529 | 2 | 0.265 | 0.406 | 0.668 ^a |
| Residual | 47.563 | 74 | 0.652 | | |
| Total | 48.092 | 76 | | | |

a. Predictor (constants), Age, Gender

b. Dependent Variable: CGPA

Results in Table 4 shows that the predictor variables jointly account for 2.1% of the variance observed in students CGPA, the result is however not significant.

Research Hypothesis

H01: There is no significant difference in the academic performance of female and male chemistry students of F.C.E (Tech.), Omoku in 2007/08 session.

Table 5: Mean rating, standard deviation and t-analysis of chemistry students

| Sex | N | Mean | Std | df | t-cal | t-crit | Decision on hypothesis |
|--------|----|------|------|----|-------|--------|------------------------|
| Female | 36 | 2.30 | 4.27 | 76 | 0.09 | 2.0 | Accept |
| Male | 40 | 2.19 | 5.2 | | | | |

The result in table 5 revealed that t calculated was 0.09 which is lesser than critical t-value of 2.0 indicating acceptance of H01. Hence, gender was insignificant in the academic performance of chemistry students in the 2007/2008 session.

Discussions

In 2007/2008 session the department of Chemistry/Computer Education, recorded thirty-six females and forty males. The highest and lowest ages for females and males were 35 & 15 years, and 30 & 15 years respectively. The highest and lowest CGPA for females and males were 4.58 & 0.65 and 4.53 & 0.88 respectively. Findings from the study revealed that the two predictor variables age and gender had low positive correlation ($r=0.006$ & 0.105) respectively on CGPA of Chemistry students. However, the result was not significant at 0.05 confidence interval. This implies that both age and gender were positively related to the students. Russell, Barfield, Turnbull, Leibach and Pretlow (2008) also record a low correlation coefficient ($r=0.07$) between age and GPA of registered health information administrator RHIA certificate examination scores. Also, Yousefi, et al (2010) recorded a low correlation coefficient ($r=0.22$) between age and academic achievement among 400 Iranian students in the age range of 15-19 years. From Table 2, gender was a better contributor to the variance in CGPA of the students at only 1.1% while age did not contribute anything at 0%. Owolabi and Etuk-iren (2009) recorded a low positive correlation 1.3% variance between gender and academic achievement of Pre-NCE Mathematics students. However, Olayami (2009) reported an insignificant low negative correlation ($r = -0.143$) with 4.6% variance for gender-academic achievement of Physical Chemistry students of F.C.E (Tech.) Akoka. Using multiple analysis of variance (MANOVA), De Paula and Hlawaty (2004) reported a statistical relationship for their four two-way interaction of age-country, gender-country, achievement-country and achievement-age. Using the extended-fisher application, for the three levels of ages 13-15, and 17 year olds, they illustrated a significant difference on the 22 dependent learning styles.

The Beta values from Table 3 can be used to express mathematically the combined influence and contribution of the variables thus:

$$Y = 0.15x_1 - 0.018x_2$$

$$Y = \text{CGPA} \quad x_1 = \text{Age}, \quad x_2 = \text{gender}$$

Table 5 revealed a lesser t-value than the critical t-value. So, gender is not significant in the academic achievement between females and males in the department. Equally, Abubakar and Eze (2010), Abubakar and Ejimaji (2010); Abubakar and Ihiegbulem (2010), Abubakar and Uboh (2010) have all reported no statistical gender differences in Mathematics, Chemistry, Integrated Science and the overall School of Science students respectively of F.C.E (Tech.), Omoku, Rivers State in the 2007/2008 session. On the contrary, Yousefi et al (2010), reported a significant gender difference in academic achievement of Iranian students. Akinsola et al (2007) recorded no gender difference in procrastinatory behaviours and academic achievements between males and females students of University of Ibadan and University of Lagos.

Conclusion

This research contributed to the broad understanding of the connectedness of observable traits: age and gender on academic achievement of Chemistry students. It sought to establish the significance and relational effect of age and gender on Chemistry students' academic achievement (CGPA). The data have provided evidence of a positive correlation between age-academic achievement and gender-academic

achievement. Both age and gender were insignificant in academic achievement of the students but gender was the better contributor to academic achievement. This findings reiterate the success of the increasing clamour for gender equity at all levels of education which the Millennium development goals advocates for and in line with the Federal Government's 7 – point agenda of qualitative and functional education at all educational level towards improving the teaching of Chemistry.

Recommendation

Based on the findings from the study, it is recommended that for further studies, more predictive variables be added to age and gender so as to ascertain more significant predictors of academic achievements of Chemistry students. There is the need to keep learners firmly anchored on a set of human values; to teach young teachers how to process the vast variety of information so that they pick up chemistry knowledge that are qualitative and functional to themselves and the society at large. Interactive approaches and activities should be put in place to address our foremost concern of strengthening the moral fibre of our learners and opportunities inside the classroom and within classroom that will help them acquire life-long skill and imbibe esteemed principles and values, all these go a long way in improving the teaching of Chemistry for the attainment of the 7 point agenda of the federal government.

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AGE AND GENDER AS PREDICTORS OF ACADEMIC ACHIEVEMENT OF COLLEGE MATHEMATICS AND SCIENCE STUDENTS

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Abstract: This study examined the correlates between age and gender on academic achievement (CGPA) of Mathematics and Science students. The study used three hundred and thirty-two (332) students; two hundred and twenty-three(223) females and one hundred and nine (109) males . Scatter-plot, mean and Standard deviation were used for the descriptive statistics while univariate analysis of variance (ANOVA) and multiple regression were used for the inferential statistics. Z-test was used to test the null hypothesis formulated ($P < 0.05$).Result revealed a linear relationship between, age-CGPA and gender-CGPA.A low positive correlation coefficients was obtained for ages and gender ($r=0.030$ and 0.111) which significant. The predictor variables jointly accounted for 1.3% of the variance, gender was the better predictor. The null hypothesis tested was accepted implying no significant gender difference in academic achievement of the students. It was suggested that some more variables be included so as to determine significant contributory effect of students academic achievement of Mathematics students .

Key words: Academic achievement, Age and Gender, Cumulative grade point average(CGPA), Academic Persistence.

Introduction

The quintessential achievement oriented domain education, particularly for college students', includes high performance on tests, passing courses and completing degrees (Habibollah, Margery, Shupe and Yager,2009).Over the years, researches have revealed that academic achievement has numerous determinant factors ranging from socio-economic status (Ajayi and Muraina,2011),students employment status (Wantabe,2005),learning disabilities (Shupe and Yager,2011),Students Interest (Udegbe,2009),attitude (acceladjo,2001),Guidance and counseling (Odubanjo and Adeniji,2010) ,teaching methods (Eniayeju,2010),School entry modalities (Cameson and Wilson ,2011; Olayemi,2009), Gender continuous assessment (Owolabi and Etuk-Iren,2009).Due to the quest for better academic performance of students at all levels of education. Researches have continued to be improved upon by studying joint effect of predictor variables which this study is one of such .Age has played a considerable part

as regards to education, like entry age of students to a school, hence age could be a predictor of success. Gender is the properties that distinguish organism on the basis of their reproductive roles as female or male (Abubakar and Uboh, 2010). Studies is fast disrupting many past erroneous belief that males perform better than female (Abubakar, 2010; Eniayeju, 2010). The world is fast changing due to Science and technology hence the emphasis on Science Technology and Mathematics.

This study sought to find out the contributory effect of age and gender on students academic performance of Mathematics and Science students of Federal College of Education (Technical), Omoku, Rivers State, Nigeria

PURPOSE OF THE STUDY

The purpose of this study was to determine if there were significant relationship and contributory effect of gender and age on the academic achievement of Mathematics students. Also, the effect of gender on academic achievement in Mathematics was ascertained.

RESEARCH QUESTIONS

1. Are there any relationship between gender, age and academic achievement of Mathematics and Science students?

2. What is the individual contribution of each of the two predictor variables: age and gender to students' performance?

3. What is the joint contribution of the two predictor variable to students' academic achievement in Mathematics and Science?

RESEARCH HYPOTHESIS

H_{01} : There is no significant difference in the academic performance of female and male mathematics and science students of F.C.E.(Tech.), Omoku in 2007/08 session.

Methods

Research Design

The study is a non-experimental type hence used expo-factor design.

Population and Sample

The population of this study comprised all the students of Federal College of Education (Technical), Omoku, Rivers state, Nigeria. The college is a technical college that has five (5) Schools: Technical Education, Vocational Education, Science Education, Business Education and School of Education. School of Science Education students was purposively sampled out due to the nature of the study. The academic session of 2007/2008 was selected for the study. School of Science has five (5) departments: Integrated Science ISC, Mathematics MAT, Chemistry CHM, Physics PHY and Computer COMP. Computer department serves as the technical department to all the remaining four department, so, each science student has prefixes: ISC/COMP, MATHS/COMP, CHM/COMP AND PHY/COMP. In 2007/2008 academic session, ISC recorded One hundred and forty-five students; Mathematics recorded seventy-eight (78) students, Chemistry department had seventy-six (76) students while Physics recorded thirty-three (33) students. So, all the three hundred and thirty-two (332) Mathematics and Science students constituted the sample for the study.

Data collection

The study employed secondary data for the study. Data was obtained from School of science Education data records and the admissions unit of the College. The

college approved result that reflects each students session cumulative grade point average CGPA were obtained from School of Science record data base. For the records ,CGPA of students is the cumulative Grade point average divided by the cumulative credit unit of all the courses registered and taken by each student for first and second semester. Age and gender of the students were obtained from the admissions unit of the college.

Data Analysis

The age, gender and CGPA of each student were entered into a data base .The statistical package SPSS was used for the comparative analysis. Mean, standard deviation and scatter plot were utilized for the descriptive statistics. Inferential statistics was established using bivariate correlation, univariate analysis of Variance ANOVA,T-test, Z-test and multiple regression analysis. The scatter plot of the variables revealed a linear relationship ,hence Pearson's correlation was used to determine the significance of the relationship between the predictors age, and gender and the dependent variable CGPA.

Results are as presented below

Table 1: Percentage Gender composition of Mathematics and Science Students

| Department | female | % | Male | % | Total |
|---------------|--------|----|------|----|-------|
| ISC/COMP (06) | 115 | 79 | 30 | 21 | 145 |
| MAT/COMP(07) | 38 | 49 | 40 | 51 | 78 |
| CHM/COMP(08) | 55 | 72 | 21 | 28 | 76 |
| PHY/COMP(09) | 15 | 45 | 18 | 55 | 33 |
| TOTAL | 223 | 67 | 109 | 33 | 332 |

Research Question 1

Are there any relationship between gender ,age and academic achievement of Mathematics and Science students ?

Table 2: Correlation matrix of age, gender and CGPA

| Variables | CGPA | Age | Gender |
|-----------|--------|--------|--------|
| CGPA | 1 | | |
| Age | 0.030 | 1 | |
| Gender | 0.111* | -0.006 | 1 |

*Correlation significant ($P < 0.05$)

Research Question 2

What is the individual contribution of each of the two predictor variables: gender and age to students' performance?

Table 3: Percentage contribution of Age, Gender on CGPA

| | Age | Gender |
|--------------------|-------|--------|
| Multiple R | 0.030 | 0.111 |
| R square (R^2) | 0.001 | 0.012 |
| % Contribution | 0.1 | 1.2 |

Table 3 revealed that Age contributed only 0.1% to the variance observed in CGPA while Gender contributed 1.2%.

Table 4: Relative contribution of each of the variables and their significance

| Variables | Standard Error | Beta values | t | Significance |
|-----------|----------------|-------------|-------|--------------|
| Age | 0.014 | 0.031 | 0.559 | 0.577 |
| Gender | 0.104 | 0.111 | 2.036 | 0.043 |

Research Question 3

What is the combined contribution of the two predictor variable to students' academic achievement in Mathematics?

Table 5: Summary of the Multiple Regression Analysis

| ANOVA ^b | | | | | |
|-------------------------------|----------------|-----|-------------|-------|--------------------|
| Multiple R=0.115 ^a | | | | | |
| R square =0.013 | | | | | |
| Adjusted R square= 0.007 | | | | | |
| Standard Error= 0.89134 | | | | | |
| ANOVA ^b | | | | | |
| | Sum of squares | df | Mean square | F | Significance |
| Regression | 3.529 | 2 | 1.764 | 2.221 | 0.110 ^a |
| Residual | 261.384 | 329 | 0.794 | | |
| Total | 264.913 | 331 | | | |

a. Predictor (constants), Age, Gender

b. Dependent Variable: CGPA

Results in Table 5 revealed that the combination of the two independent variables age and gender yielded a multiple regression (R) of 0.115 with the dependent variable CGPA.

Research Hypothesis

H₀₁: There is no significant difference in the academic performance of female and male Mathematics and Science students of F.C.E.(Tech.), Omoku in 2007/08 session.

Table 6: Mean, standard deviation and z-analysis of Mathematics and Science students

| Gender | N | min | max | mean | std | Z _{cal} | Z _{crit} | Decision |
|--------|-----|------|------|------|------|------------------|-------------------|----------|
| Female | 242 | 0.27 | 4.58 | 2.18 | 0.87 | -1.76 | 1.96 | Accepted |
| male | 123 | 0.67 | 4.59 | 2.36 | 0.98 | | | |

Result from Abubakar and Uboh (2010)

Discussion of Findings

Table 1 revealed the gender composition of Mathematics and Science students. ISC department recorded the highest enrolment with one hundred and fifteen female at 79% composition and 21% male followed by Chemistry department that recorded 72% female out of its seventy-six (76) total enrolment. Mathematics

department recorded 51% males and 49% female while Physics recorded the lowest enrolment and gender composition of 15:18 female to male percentage ratio. Overall, school of Science had 67% female enrolment and 33% male enrolment.

Table 2 revealed that predictor variable of age had lower positive correlation than gender with their dependent variable CGPA. However, gender revealed a significant correlation with student CGPA. Gender had a negative correlation with age which was not significant. This implied that both age and gender were positively related to CGPA of the students. Abubakar (2010) earlier also recorded a positive but insignificant correlation between age, gender and CGPA of Mathematics students of F.C.E (Technical) in the 2007/2008 academic session. Owolabi and Etuk-Iren (2009) however, found out that the best correlates of students performance in Pre-NCE Mathematics in F.C.E.(Tech.), Akoka, Lagos was the Continuous assessment score.

From Table 3, it was evidently revealed that age is insignificant as it relates to CGPA, it was responsible for 0.1% of variance in performance of Mathematics and Science students while gender was responsible for 1.2% of the variance. Owolabi and Etuk-Iren (2009) recorded a similar result where gender was responsible for 1.3% of the variance in the performance of two hundred and thirty-three (231) Pre-NCE Mathematics students of F.C. E (Technical), Akoka, Lagos state. Abubakar (2010) however recorded a 0% variance contribution in the CGPA of Mathematics students of F.C.E.(T), Omoku, Rivers state, Nigeria.

From Table 5, neither age nor gender contributed significantly to the variance of CGPA of the students. The combined influence and contributions of the variables can be presented thus:

$$Y = 0.031x_1 + 0.111x_2$$

Where x_1 = age, x_2 = gender and y = CGPA

Olayemi (2010) in his study recorded a statistically significant contribution of only average score in Mathematics AVM as a predictor of academic performance in Physical Chemistry using Year II and III chemistry NCE students of F.C.E.(Technical), Lagos, Nigeria during the 2006/2007 session among nine other predictor variables of chemistry score, attitude to Mathematics, Course combination, gender, Senior secondary examination SSE Mathematics, NCE grade in Mathematics, SSCE grade in Chemistry, National examination council NECO grade in Chemistry and mode of entry.

From Table 5, the predictor variables jointly accounted for 1.3% of the variance observed in students CGPA, result however was not significant. Olosunde and Olaleye (2009) found that combined effect of nine independent variables yielded a multiple regression explaining 63.4% of the variance in female students achievement in Mathematics. However, Owolabi and Etuk-Iren (2009) in their study using predictor variables of: Mathematics Performance Test, Mathematics continuous Assessment score and course of study jointly accounted for 24% of the Pre-NCE Mathematics performance Test. Wilson and Cameson (2011) found a statistically significant but relatively small achievement differences between oldest and youngest children when cognitive ability scores were controlled using three hundred and thirteen students. Ajayi and Muraina (2011) reported that social economics status predictor variable of

Parents education, occupation and real mothers age jointly produced 0.3% variance but was significant on academic performance of students in Ogun state in Nigeria. Similarly, Habibollah et al(2009) discovered that creativity ,age and gender jointly accounted for 0.143 of the variance in GPA of Iranian undergraduate students in Malaysian Universities.

Table 6 showed that male student had the highest CGPA of 4.59 while a female had the lowest CGPA of 0.27. Student with CGPA less than one repeats the level, hence, from ISC, eleven students repeated, Mathematics had five repeaters .Chemistry and Physics recorded one repeaters each .The age range for both male and female was between 15 -37 years. Hypothesis formulated was accepted ,hence, no significant difference in the academic performance of female and male Mathematics and Science students of F.C.E.(T.),Omoku. Abubakar(2010) recorded a similar gender result with only Mathematics students in the same session. Habibollah et al (2009) also recorded no significant gender difference in CGPA in their study.

Conclusion and Recommendation

Evidently from the study is the fact that during the 2007/2008 academic session of F.C.E (Technical),Omoku, Rivers state, Nigeria, age gender was a predictor of the academic performance (CGPA) of Mathematics and Science students. However, gender was a better predictor. Both age and gender jointly accounted for 1.3% of the variance in the students CGPA..The session also recorded no significant gender difference in CGPA of the students. In the general academic performance of the student, eighteen students out of the three hundred and thirty-two students used for the study had to repeat their level implying a 95% success rate in the academic performance of the students. This present study can be carried out in sister colleges to establish an affirmative or refutive result .Also, more variables can be included to detect what most significantly and effectively contribute to mathematics and science students academic performance.

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RELATIONSHIP BETWEEN SELF-CONCEPT AND MATHEMATICS ACHIEVEMENT OF SENIOR SECONDARY STUDENTS IN PORT HARCOURT

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Abstract: *This study explored the extent to which the self-concept of students in Port Harcourt relates to their Mathematics, and General Academic Achievement. The population consisted of 6,478 senior secondary 3 (SS3) students from 13 state financed senior secondary schools in Port Harcourt. Stratified random sampling was conducted to select 3 schools (one school each from 2 mixed schools, 5 boys' schools and 6 girls' schools). The sample for study was 300 SS3 students from the 3 randomly selected schools. The instrument used for data collection was the Self-Description Questionnaire 111 (SDQ 111) developed by Marsh (1992) which contains 13 self-concept facets out of which 2 facets (Mathematics, and General Academic) were adopted for this study. The subjects were tested in Mathematics and scores obtained. The general average scores of the students on their promotion examination from SS2 to SS3 were extracted from their school records. The Person's Product Moment Correlation analysis was used to answer the research questions, while the transformed t-test was used to test all the 3 hypotheses formulated for this study. The results of the tests indicated that Mathematics Self-concept is significantly related to Mathematics Achievement, General Academic Achievement and General Academic Self-concept. The main implication of the findings of this study is that self-concept and Mathematics, and General Academic achievement of students are so strongly related that a change in self-concept facilitates a change in achievement. It was therefore, recommended that educational programme designers and developers, teachers, parents and students should make self-concept development of students an educational aim as important as academic achievement.*

Keywords: *Self-concept, Mathematics Achievement, General Academic Achievement.*

Introduction

Students' performance in Secondary School Certificate Examinations (SSCE) administered by the West African Examination Council (WAEC), and the National Examination Council (NECO), continued to deteriorate from year to year, particularly in the areas of Science and Mathematics (Akubuiro and Joshua, 2004). For Nigeria, a developing country that needs Science and Technology for its development, the poor performance of students in Science and Mathematics and worse still, the very

insignificant proportion of students who choose Mathematics as a course of study after secondary education have turned the concern of the government and people of Nigeria into anxiety. This situation does not favour Nigerian's move towards developing a science and technology culture.

However, this problem is not peculiar to Nigeria. Even the developed nations have similar worry and concern. A Gallup Survey commissioned by Bayer Corporation (2003) found nine in every ten Americans concerned about the lack of Mathematics skills of today's students to cope with a changing world that is progressively more difficult to understand, analyze, or explain. Futurists predict continual change emerging from the effects of increasing world population, advancing technologies, environmental degradation, migration and immigration, and challenges to world security (Marsh and Yeung, 1996). In coping with these emerging challenges, students have a competitive advantage when they are able to draw upon meaningful scientific knowledge and functional mathematical skills. According to Cech (2003), a progressively complex world calls for increasingly skilled people who understand Science and Mathematics.

The unresolved riddles therefore are: Why the poor performance of students in Mathematics despite the lofty uses to which Mathematics has been put (Euclid in Principles of Geometry, Einstein in Quantum and Relativity Theories, Newton in Laws of Gravitation and Motion, etc) and is yet to be put? What can be done to check the deteriorating performance of students in Mathematics, and make way for the acquisition of the requisite Mathematical skills for the understanding of today's complex world and the demands of tomorrow?

Some investigations revealed that the questions above, and even many more others, owe their answers to the complexity of self-beliefs (e.g. self-concept) that act on the students (Purkey & Schmidt, 1987; Chapman & Turner, 1997; Yeung & Lee, 1999). The above researches have shown close relationship between self-concept and academic achievement.

Statement of the Problem

The Nigeria nation and other nations of the world have shown tremendous concern about the poor performance of students in Science and Mathematics (Akubiro & Joshua, 2004; Bayer Corporation, 2003). This poor performance of students in Mathematics in Nigeria – a country that needs Mathematics for its development – deserves the total attention of educational planners, teachers and researchers in Nigeria for a possible turnaround of the poor performance of students in Science and Mathematics.

According to Marsh (1986), self-concept has been shown to be a very important educational achievement indicator as well as a desirable mediating variable leading to other positive outcomes, such that educational policy statements throughout the world list self-concept enhancement as a central goal of education. Whether or not educational policies in Nigeria list self-concept as a central goal of education is a topic for another study.

Suffice it to say that in Nigeria, few researches have been carried out which confirm the significant relationship between self-concept and Mathematics

Achievement (Bassey, 2002; Jamabo, 1996; Osang, 1990). A lot more studies need to be done to replicate the above findings in Rivers State and other parts of Nigeria to answer the question: “Why poor students’ performance in Mathematics”, and possibly suggest ways to check the negative trend.

Purpose of the Study

The purpose of this study is to determine whether or not (and to what extent) significant relationships exist between Students’ Mathematics Self-concept and Students’ Mathematics Achievement, Students’ General Academic Achievements and Students’ General Academic Self-concept. The following research questions directed the study:

1. To what extent does students’ Mathematics self-concept relate to students’ Mathematics Achievement?
2. What is the extent to which students’ Mathematics Self-concept relate to students’ General Academic Achievement?
3. To what extent does the Mathematics Self-concept of students relate to students’ General Academic Self-concept?

Statement of Hypotheses

The study was guided by the following three null hypotheses:

1. There is no significant relationship between Students’ Mathematics Self-concept and Students’ Mathematics Achievement.
2. There is no significant relationship between Students’ Mathematics Self-concept and Students’ General Academic Achievement.
3. There is no significant relationship between Students’ Mathematics Self-concept and Students’ General Academic Self-concept.

Significance of the Study

Based on the results of this study, the poor performance of Nigerian students in Science and Mathematics could be hinged, totally or in part, on low Mathematics Self-concept. Thus educators, curriculum developers, teachers and parents would see the need to list self-concept enhancement as a central goal of education in Nigeria.

Review of Related Literature

The overriding theoretical orientation of this study is grounded in the perceptual psychology tradition. Perceptual psychologists postulate that all persons create their own reality through their perceptions of what they believe to be real. And that a person’s behaviour is contingent on how an individual perceives and interprets his/her experiences (Combs and Gonzales, 1994). Thus from the perspective of the perceptual psychology, it is clear that to understand an individual’s behaviour, we need to know how that individual perceives and interprets his/her experiences. In other words, to appreciate students’ academic performance, we need to understand how students perceive and interpret school and school subjects.

The most influential and eloquent voice in self-concept theory was that of Carl Rogers who introduced an entire system built around the importance of the self (Hattie,

1992). In Rogers' view, the self is the central ingredient in human personality and personal adjustment. Rogers described the self as a social product, developing out of interpersonal relationships and striving for consistency. He maintained that there is a basic human need for positive regard both from others and from oneself. He also believed that in every person there is a tendency towards self-actualization and development so long as this is permitted and encouraged by an inviting environment.

Self generally means the conscious reflection of one's own being or identity, as an object separate from others or from the environment. There are a variety of ways to think about the self. Two of the most widely used terms are self-concept and self-esteem. Self-concept is the cognitive or thinking aspect of self (related to one's self-image) and generally means the totality of a complex, organized, and dynamic system of learned beliefs, attitudes and opinions that each person holds to be true about his or her personal existence (Purkey & Schmidt, 1987). Self-concept can also mean the general idea we have of ourselves.

The idea of self-concept includes attitudes, feelings and knowledge about ability, skills, and social acceptance capability of the self. Self-concept covers all aspects of our cognitive, perceptual, and affective evaluation. Therefore, self-concept is simply a collection of personal attitudes towards oneself (Gross, 1992).

Psychologists have paid a lot of attention to factors related to the formation and development of self-concept. This issue is very important to the field of mental health, as an individual's conception of his or her person, which is linked to the personality, to a certain extent determines the attitude of that person to his or her environment, and to a larger extent the person's academic performance. It may then be suggested that if self-concept is positive and normal, the individual will possess normal mental health. Adversely, if self-concept is negative and abnormal, the individual may behave abnormally in his or her environment. The implication is that good mental health (resulting from positive self-concept) makes for positive academic achievement.

The consensus appears to be that self-concept is largely acquired. This point is very pertinent for students and for those who are involved in their upbringing, particularly their parents and teachers. Other factors affecting self-concept are the behaviour of others around the individuals, and social stimulation.

Marsh (1992) showed that the relationship of self-concept to school achievement was very specific. According to Marsh, general self-concept and non-academic aspects of self-concept are not related to academic work, but general academic achievement measures were found to relate positively to general academic self-concepts and are highly related to success in that content area.

Many students are not confident about their mathematical ability to solve problems. A poor attitude towards the discipline is thought to plague learners at every level of schooling. The fear of both answering mathematical questions in class and/or taking mathematical tests has been studied by Marsh, and Hocer (1985) and Stodolsky (1985), and both studies found consistent results that fears of Mathematics often escalates to a level termed mathematics anxiety with the effect of poor achievement in Mathematics. They concluded that individuals with poor attitudes towards mathematics are often reported to have a low self-concept and feelings of

incompetence. These attitudes are manifested as self depreciating remarks and a perpetual lack of success in Mathematics.

According to Wong (1992), mathematics achievement is closely related to self-concept and attitude towards mathematics. As in the case of the general self-esteem, more mathematically confident students have significantly higher scores on a standardized measure of mathematics computations. Osang (1990), in his study, tested the relationship between students' performance in mathematics and self-concept. He found that students' performance in mathematics depended on their mathematics self-concept. That is, their achievement in mathematics depended on what they thought of or believed about themselves, with reference to mathematics as a subject.

In a study conducted by Byrne (1984), he founded that relationship between students' self-concept in Mathematics and their Mathematics Achievement is logically and inevitably connected. Byrne reported that achievement in Mathematics is highly related to what an individual thinks of Mathematics. That is, ones Mathematics self-concept will influence ones achievement in Mathematics. Also students' self-perceptions of mathematics ability influence their mathematics achievement, and that their attitude towards mathematics during high school has positive effects on their choosing careers in science and mathematics.

Methodology

The study adopted the Correlational Research Design. The population of the study consisted of 6,478 SS3 students of the 13 state government financed post primary schools in Port Harcourt. Only the state schools were chosen (as against unity schools and private schools) to make for homogeneity: that is, to ensure the use of subjects that have similar characteristics.

The sample for this study consisted of three hundred (300) SS3 students that were chosen from 3 randomly selected schools from 13 senior secondary schools in Port Harcourt. The study employed the stratified random sampling technique, each school type (single boys, single girls and mixed schools) was considered a stratum and a senior secondary school selected at random.

All the research questions were answered using the Pearson's Product Moment Correlation Statistic, with Mathematics Self-concept as independent variable and Mathematics Achievement, General Academic Achievement and General Academic Self-concept as dependent variables. To test the null hypotheses formulated for this study, the computed Person's Product Moment Correlation Coefficients (r) were transformed to t-test using the formula,

$$t = r^2 \cdot [(n - 2)/(1 - r)]^{1/2}.$$

Results

In the tables that follow, SMS = Students' Mathematics Self-concept, SMA = Students' Mathematics Achievement, GAS = General Academic Self-concept, and GAA = General Academic Achievement.

Hypothesis One: There is no significant relationship between students' Mathematics Self-concept and students' Mathematics Achievement.

Table 1: Transformed t-test on the Relationship between Students' Mathematics Self-concept and Students' Mathematics Achievement

| Variables | N | Mean | SD | df | p | Cal (r) | Crit. (r) | Cal. t-test trans. | Crit. t-test trans. |
|-----------|-----|-------|-------|-----|------|---------|-----------|--------------------|---------------------|
| SMS (x) | 300 | 31.21 | 10.65 | 298 | 0.05 | 0.767 | 0.139 | 20.55 | 1.960 |
| SMA (y) | | 27.13 | 13.81 | | | | | | |

The result in the above table indicates that there is a significant positive relationship between Mathematics Self-concept of students and students' Mathematics Achievement [calculated $t = 20.55 > \text{critical } t = 1.960$ at $p < 0.05$; $df = 298$]. This significant positive relationship implies that students with high Mathematics Self-concept will generally achieve higher in Mathematics than those with low Mathematics Self-concept.

Hypothesis Two: There is no significant relationship between students' Mathematics Self-concept and students' General Academic Achievement.

Table 2: Transformed t-test on the Relationship between Students' Mathematics Self-concept and Students' General Academic Achievement

| Variables | N | Mean | SD | df | p | Cal (r) | Crit. (r) | Cal. t-test trans. | Crit. t-test trans. |
|-----------|-----|-------|-------|-----|------|---------|-----------|--------------------|---------------------|
| SMS (x) | 300 | 31.21 | 10.65 | 298 | 0.05 | 0.131 | 0.139 | 2.281 | 1.960 |
| GAA (z) | | 49.63 | 14.46 | | | | | | |

The data in Table 2 show that the calculated t , though low, is significant at the 5% confidence level [calculated $t = 2.281 > \text{critical } t = 1.960$ at $p < 0.05$; $df = 298$]. This implies that students with high Mathematics Self-concept can achieve highly in general school work.

Hypothesis Three: There is no significant relationship between students, Mathematics Self-concept and students' General Academic Self-concept.

Table 3: Transformed t-test on the Relationship between Students' Mathematics Self-concept and Students' General Academic Self-concept

| Variables | N | Mean | SD | df | p | Cal (r) | Crit. (r) | Cal. t-test trans. | Crit. t-test trans. |
|-----------|-----|-------|-------|-----|------|---------|-----------|--------------------|---------------------|
| SMS (x) | 300 | 31.21 | 10.65 | 298 | 0.05 | 0.147 | 0.139 | 2.565 | 1.960 |
| GAS (m) | | 37.89 | 7.23 | | | | | | |

This result shows a significant positive relationship between Students' Mathematics Self-concept and Students' General Academic Self-concept at the 5% confidence level [calculated $t = 2.565 > \text{critical } t = 1.960$ at $p < 0.05$; $df = 298$]. The

interpretation is that students with high Mathematics Self-concept have the tendency of viewing school and academics positively.

Conclusion

This study investigated the extent to which students' mathematics self-concept relates to students' mathematics achievement, general academic achievement and general academic self-concept. Significant positive relationships were found in all the three cases at the 0.05 level of significance. These results are supported by Marsh (1990) and Morriss and Smith (1978). This study further found that the strength of relationship between Mathematics Self-concept and Mathematics Achievement decreased as Mathematics Self-concept was compared with General Academic Achievement and General Academic Self-concept. It is clear that self-concept becomes more empirically sensitive to, and more predictive of, achievement outcomes the more specific that it is conceived and assessed.

According to Bandura (1997), self-concept beliefs influence the choices people make and the courses of action they pursue. Individuals tend to engage in tasks about which they feel competent and confident and avoid those which they do not. Self-concept also helps determine how much effort people will expend on an activity, how long they will persevere when confronting obstacles, and how resilient they will be in the face of adverse situations. The higher the self-concept, the greater the effort, persistence, and resilience an individual puts on tasks. As a consequence, self-concept exercises a powerful influence on the level of accomplishment that individuals ultimately realize. Conversely, people who doubt their capabilities may believe that things are tougher than they really are: a belief that fosters stress, depression, and a narrow vision of how best to solve a problem. In other words, many students have difficulty in school not because they are incapable of performing successfully but because they have learned to see themselves as incapable of handling academic work. This study has shown that the more positive the self-concept of students, the higher their motivation, commitment and success in academics and other endeavours.

Thus, given the significance of self-concept in academic achievement of students, the enhancement of self-concept outcomes should be of major concern to educators, program developers, teachers, parents and counselors.

Recommendations

The self-concept beliefs of teachers are themselves related to their instructional practices and to the achievement and psychological well-being of their students. Efficacious teachers create classroom climates in which academic rigor and intellectual challenge are accompanied by the emotional support and encouragement necessary to meet the attendant challenge and achieve academic excellence (Tschannem-Moran and Woolfolk Hoy, 1998). All teachers should, therefore, do well to take seriously the responsibility of nurturing the self-concept of their students, for it is clear that these self-beliefs can have beneficial or destructive influences.

Teachers should pay as much attention to students' perception of competence as to actual competence, for it is the perception that may more accurately predict student's

motivation and future academic choices. Assessing students' self-concepts can provide schools with important insights about their students' academic motivation, behaviours, and future choices. For example, unrealistically low self-concept leads to poor academic behaviours, avoidance of challenging courses and careers, and diminishing school interest and achievement.

The ultimate aim of education should be to produce competent, caring, loving, and lovable people. One needs only cast glance at the American landscape to see that attending to the personal, social, and psychological concerns of students is both a noble and necessary enterprise. Teachers can aid their students by helping them to develop the habit of excellence in scholarship, while at the same time nurturing their self-beliefs necessary to maintain that excellence throughout their adult lives.

Parents should develop positive self-concept in their children, at the early stages of their lives. This could be best done at home which is the most important social force in shaping and maintaining the child's self-concept. The home environment is the strongest agent in shaping the child's self-concept, so the earlier he is exposed to positive self-concept formation the better. Positive attitudes of the parents towards their children will boost their ego, strengthen their feeling of self-worth and act as another form of motivation to work harder. Empathy should be applied in this kind of relationship and no sign of conflict of interest should be experienced in their child's choice of subjects and career.

Counseling services should be provided in schools so that students having problems in academic subjects can be attended to through the combined efforts of the school and the home. Students, because of their sexes, should not be discouraged directly or indirectly from learning certain subjects when they are young. In other words, students should be discouraged from forming stereotyped attitudes towards certain subjects, because of their sexes. This will boost positive competition between males and females, and enhance academic achievement and excellence.

The influence of students' self-beliefs on their achievement does not end with their schooling. Consequently, the aim of education must transcend the development of academic competence. Schools have the added responsibility of preparing self-assured and fully-functioning individuals capable of pursuing their hopes and their ambitions.

Self-concept theory is a relatively new area in the Nigerian educational scene. Thus, more researches on this field should be conducted to delve more into the self-concept patterns and how they affect vocational choices, physical appearance, problem-solving abilities and the up bringing of children by parents. These studies should be done to test the various facets of self-concept in different populations. Perhaps, it will then be hoped that educational policy statements in Nigeria would list and emphasize positive self-concept development as a central goal of education.

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ASSESSMENT OF SECONDARY SCHOOL TEACHERS' USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN OYO METROPOLIS, NIGERIA

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Abstract: *This study examines the availability and usability of Information and communication technology among secondary school teachers in Oyo Metropolis. The Research Design employed is the descriptive survey design. Three research questions were formulated for the study. The population for the study consisted of 120 secondary school teachers. Questionnaire was used as the instrument for gathering data for the study. Data collected were analyzed using frequency tables and simple percentage. Results of the study showed that ICT facilities are not available in most of the schools covered. It was also observed most teachers used as the sample for the study, are not competent in the use of ICT. Recommendations were then made to the government.*

Introduction

Information and Communication Technology (ICT) may be viewed in different ways. Rodriguez and Wilson (2000) defined ICT as a set of activities which facilitate by electronic means the processing, transmission and display of information. ESCAP (2000) in its own definition defined ICT as techniques people use to share, distribute, gather information and to communicate through computers and computer networks. Marcelle (2000) described ICT as a complex varied set of goods, applications and services used for producing, distributing, processing, transforming information (including) telecoms, TV and radio broadcasting, hardware and software, computer services and electronic media. Ogunsola and Aboyade (2005) viewed ICT as a cluster of associated technologies defined by their functional usage in information access and communication of which one embodiment is the internet. Information and Communication Technology are computer based tools used by people to work with information and communication processing needs of an organization. It purview covers computer hardware, software, the network and other digital devices like video, audio, camera and so on which convert information (text, sound, motion etc) into digital form (Moursund and Bielefeldt, 1999). Information and Communication Technology as tools within the school environment include use for school administration and management, teaching and learning of ICT related skills for enhancing the presentation of classroom work, teaching/learning repetitive tasks, teaching/learning intellectual, thinking and problem solving skills, stimulating creativity and imagination, for

research by teachers and students and as communication tool by teachers and students (Collis and Moonen, 2001, Derbyshire, 2003; Moursund and Bielefeldt, 1999).

The field of education has been affected by ICTs, which have undoubtedly affected teaching and research (Yusuf, 2005). A great deal of research has proven the benefits of ICT in improving quality of education (AL-Ansari, 2006). As a result of this, developed nations have integrated ICT into their educational system. Adomi and Kpangban (2010) observed that there are developments in the Nigerian education sector which indicate some level of ICT application in secondary schools in Nigeria. They traced the introduction of computer education in secondary schools to 1988, when Nigeria government enacted a policy on computer education. The Federal Government of Nigeria in the National Policy on education 2004 recognizes the prominent role of ICTs in the modern world and has integrated ICTs into education in Nigeria (Adomi and Kpangban, 2010). To actualize this goal, the document states that government will provide basic infrastructure and training at the primary school. At the junior secondary school, computer education is made a pre-vocational elective and is a vocational elective at the senior secondary school.

The Federal Ministry of Education launched an ICT-driven project known as SchoolNet, which was intended to equip all schools in Nigeria with computers and communication techniques. Under the SchoolNet programme, MTN provided fully operational computer laboratories with 21 personal computers, VSAT interconnectivity, hand-on training in 24 secondary schools in Kaduna, Lagos, Enugu, Kwara, Rivers and the Federal Capital Territory Abuja. In all, over 49,524 pupils and 2,412 teachers were trained on how to use ICT facilities (Abdul-Salaam, 2007).

To adequately provide ICT facilities to secondary schools, the Nigerian Federal Government commissioned a Mobile Internet Unit (MIU) which is operated by the Nigerian National Information Technology Development Agency (NITDA). The MIU is a locally-made bus that has been converted into a mobile training and cyber centre. Its interior has ten workstations, all networked and connected to the internet. The MIU is also equipped with printers, photocopiers and a number of multimedia facilities. Internet connectivity is provided via VSAT with a 1.2m dish mounted on the roof of the bus. It is also equipped with a small electric generator to ensure regular power supply. The MIU takes the internet to places, areas and various secondary schools (Adomi and Kpangban, 2010). They added that the number of these buses is so small and as a result most rural schools are yet to benefit from this project.

Successful integration of ICT in the school system depends largely on the availability and competence and the attitude of teachers towards the role of modern technologies in teaching and learning. Research works have shown that most secondary schools have either insufficient or no ICT tools to cater for the ever increasing population of students in the schools and where they are available, they are by implication a matter of out-of-bounds to the students (Chattel, 2002; Cheng, 2003; Chiemeké, 2004). Fakeye (2010) also found out in a study carried in Ibadan that in most of schools covered in the study do not have computers, hence are not connected to the internet. He added those who have computers do not use them for teaching but solely for administrative purposes. In another study by Okwudishu (2005), he found out that the unavailability of some ICT components in schools hampers teachers' use of ICTs. Lack of adequate search skills and of access points in the schools were

reported as forces inhibiting the use of internet by secondary school teachers (Adomi and Kpangban, 2010).

A survey carried out by Cirfat and Longshak (2003) revealed that only one school, out of ten has computer sets. It is worth noting that none of the ten schools has internet facility. Ozoji (2003) reported in a study that most of our secondary schools do not have software for the computer to function. One of the unity schools has five computers against a population of 900 and no internet software was installed. The facilities are grossly inadequate for any meaningful teaching or learning to take place. On teachers' competence, teachers in Nigerian secondary schools are not competent in basic computer operation and in the use of generic software (Yusuf, 2005), although they have positive attitude towards the use of computer in Nigerian secondary schools. This finding revealed the low level of ICT penetration in the Nigerian school system. This reveals the state of ICT in most of the Nigerian secondary schools. The main purpose of this study was to investigate the availability of ICT facilities, level of knowledge possessed by teachers in some selected secondary schools in Oyo Metropolis.

Research Design

The descriptive survey method was considered as the appropriate design because the study is directed towards people, their opinions, attitude and behaviors. The area covered by the study is Oyo Metropolis, covering the four local governments that make up Oyo Metropolis. They are Oyo East, Oyo West, Atiba and Afijio Local Government Area.

Research Question

The following research questions were formulated for the study:

- How readily available are ICTs facilities in schools for the purpose of teaching and learning?
- Do teachers use ICT in Teaching?
- Do teachers in secondary schools have the needed experience and competence in the use of computers either for educational or industrial purpose?

Population of the Study

The population of this study was made up of 120 teachers from twelve secondary schools that were randomly selected from the secondary schools in the four local governments using the random sampling technique. Ten teachers were randomly selected from each of the twelve schools making a total of one hundred and twenty (120) teachers for the study.

Research Instrument

The instrument for the study was developed by the researcher based on established procedures in literature. The instrument contained of three sections. Section A focused on the demographic information of the teachers. Section B focused on the availability of ICT facilities in the schools while section C contained questions on the usability of these facilities by secondary school teachers.

Validity and Reliability of Instrument

The face validity and content validity of the instrument were verified by experts in the Computer Science Department and School of Education, Federal College of Education (Sp) Oyo. The various suggestions made were used to modify the

instrument. In order to ascertain the consistency of the instrument, test-retest method was used to ascertain the reliability. The questionnaire was administered twice on the sample. The interval between the first and second administration was three months. A correlation of 0.84 was achieved which was considered high enough to justify the reliability of the questionnaire.

Procedure for Data Collection

The researcher visited the selected schools to administer questionnaire developed for the study. The 120 copies of the questionnaire were administered on the respondents and collected back on the spot.

Methods of Data Analysis

Data Collected from the study were analyzed using descriptive statistics of frequency counts and Simple Percentage.

Results

The demographic information of the participants is given in table 1.

Figures from Table 1 below shows that 8.33% of the respondents are between the ages of 21 and 30, while 50% falls between 31 and 40, 33.33% are between 41 and 50 while 8.33% are 50 years and above. It also showed that 58.33 of the respondents are female while 41.67% are male. 25% of the respondents are NCE holders, while 66.67% hold a first degree and 8.33% of the respondents are masters degree holder. 8.33% of the respondents have spent 1 to 10 and 31 years above respectively in the teaching service. 58.33% of them have spent 11 to 20 years while 25% of them have spent 21 to 30 years in secondary schools as teachers.

Table 1: Demographic Information of Respondents

| ITEM | FACTOR | PERCENTAGE |
|----------------------------------|-----------------------------------|------------|
| AGE | Age (Year) | Percentage |
| | 21 – 30 | 8.33 |
| | 31- 40 | 50 |
| | 41 -50 | 33.33 |
| | 51 and above | 8.33 |
| Sex Distribution | Sex | Percentage |
| | Female | 58.33 |
| | Male | 41.67 |
| Educational Qualification | NCE | 25 |
| | B.A/B.Sc/B.Ed/B.Sc Ed/B.A Ed./HND | 66.67 |
| | M.Sc/M.A/M.Ed | 8.33 |
| Years of Experience | 1 – 10 | 8.33 |
| | 11- 20 | 58.33 |
| | 21 – 30 | 25 |
| | 31 and above | 8.33 |

Research Question 1: How readily available are ICTs facilities in schools for the purpose of teaching and learning?

The analysis as it applies to the above research question is as shown on Table 2 below

Table 2: Availability of ICT Facilities in Schools

| SN | STATEMENTS | YES | % | NO | % |
|-----|---|-----|------|-----|-------|
| 1. | There are enough computers in my school | 30 | 25 | 90 | 75 |
| 2. | My school has Educational Software for teaching | 10 | 8.33 | 110 | 91.67 |
| 3. | Our computers are connected to the internet | 5 | 4.17 | 115 | 95.83 |
| 4. | We have interactive Boards in our schools | 0 | 0 | 120 | 100 |
| 5. | There are Television set that we use for teaching | 10 | 8.33 | 110 | 91.67 |
| 6. | We have enough printers | 10 | 8.33 | 110 | 91.67 |
| 7. | There are Photocopiers in my schools. | 15 | 12.5 | 105 | 87.5 |
| 8. | Multimedia Facilities are available for teaching | 0 | 0 | 120 | 100 |
| 9. | We have Projectors in our schools | 2 | 1.67 | 118 | 98.33 |
| 10. | Presence of a virtual library | 0 | 0 | 120 | 100 |

The results in table 2 are on the availability of ICT facilities in secondary schools. Results showed that ICT facilities are not readily available, with items 1 to 10. 75% of the teachers stated that they do not have enough computers. The study showed that none of the school covered in this study have interactive boards, multimedia facilities and virtual library. 8.33% of respondents said that they have educational software, television set and printers, while 4.17% of the respondents said their computer systems are connected to the internet. 12.5% of the respondents said they have photocopiers in their schools.

Research Questions 2 & 3: Do teachers use ICT in Teaching? and Do teachers in secondary schools have the needed experience and competence in the use of computers either for educational or industrial purpose?

The Table 3 below shows results for the analysis of the research questions stated above.

Table 3: Teachers use of ICT Facilities

| SN | STATEMENTS | YES | % | NO | % |
|-----|--|-----|-------|-----|-------|
| 1. | I can boot the computer | 40 | 33.33 | 80 | 66.67 |
| 2. | I use the computer to teach my students | 12 | 10 | 108 | 90 |
| 3. | I use the computer to keep records | 02 | 1.67 | 118 | 98.33 |
| 4. | I use Microsoft Word to type Questions and other documents | 18 | 15 | 102 | 85 |
| 5. | I use Microsoft Excel to teach basic mathematics | 02 | 1.67 | 118 | 98.33 |
| 6. | I use Power Point In Presenting my Lesson | 00 | 00 | 120 | 100 |
| 7. | I browse the Internet to get materials for teaching | 09 | 7.5 | 111 | 92.5 |
| 8. | I have an e-mail address | 35 | 29 | 85 | 71 |
| 9. | I can use a search engine such as google | 12 | 10 | 108 | 90 |
| 10. | I use education software such as CAI for teaching | 08 | 6.67 | 112 | 93.33 |
| 11. | I can set up a database using MS Access | 00 | 00 | 120 | 100 |
| 12. | I can use a scanner to copy images | 02 | 1.67 | 118 | 98.33 |
| 13. | I can operate a printer that is connected to the computer | 40 | 33.33 | 80 | 66.67 |
| 14. | I can set up a multimedia projector | 02 | 1.67 | 118 | 98.33 |

The Table 3 above provides answers to the research question 2 and 3. 66.67% of the respondents cannot boot the computer. 10% of them use the computer to teach their students. 1.67% use the computer to keep records and use Microsoft Excel to teach basic mathematics, while 15% use Microsoft word to type their questions and other document. 7.5% of the respondents get their teaching material from the internet, 29% have e-mail address, so it means 29% of the respondent use the computer to send and receive mail. 10% of the respondents can use a search engine, while 6.67% of them use educational software such as CAI for teaching. 1.67% of the sample can use a scanner and can also set a multimedia. 33.33% of the respondents can print using a printer. The study showed that none of the respondent use power point and Microsoft Access.

Discussion

The result of this study shows that ICT facilities are not readily available in the schools covered by this study. It also shows that most of the schools are not connected to the internet. Schools with computers do not have the relevant educational software required by their students. In addition, the computer available in these schools cannot meet the need of the large population of students in these schools. Some schools with internet connectivity have been cut off because they have not been able to pay their access fee. The findings of this study are in line with that of Fakeye (2010) and Oyejola (2007) that most schools in Nigeria are ill equipped for the application of ICT.

The study also showed that most teachers in secondary do not use ICT teaching students, for administrative purpose and for their personal purpose. It observed that most of these teachers lack the knowledge, competence to use ICT to facilitate teaching-learning process. This Fakeye (2010) attributed to non availability of ICT facilities. He believed that the non availability of these facilities greatly hinders access and inadequate training of teachers on the use and application of the computer.

Conclusion

From the study it was concluded that ICT facilities are not readily available in our secondary school and that there is low level of ICT utilization in our secondary schools. The study revealed that most teachers lack the basic skill to use the computer and other ICT devices. Based on the findings, it is however, recommended that:

1. Government should ensure that ICT facilities be provided in schools. Education Tax Fund should be involved in procuring computer for secondary schools.
2. Government should revisit the curriculum at secondary schools level with a view to incorporating the use of computer and ICT assisted instruction in the teaching and learning process.
3. Teachers at secondary school levels should be trained on the use of ICT facilities through regular seminars and computer literacy workshops to keep them abreast of computer and ICT based instruction.

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TIME FRAME AND SYLLABUS COMPLETION OF SENIOR SECONDARY MATHEMATICS IN OMOKU DISTRICT, NIGERIA

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Abstract:*The study considered time allocated against syllabus completion before external examinations. The focal points were mathematics as a subject and an analysis of the 2009/2010 Academic Session. The analysis revealed that out of 364 days in a session, only 146 days, represented 40% of the entire session did schools engaged in various school activities. The remaining 218 days, representing 60% of the session was observed as different holidays, making time frame to be inadequate and insufficient for mathematics syllabus completion. Three theories: Total Quality Management (TQM), Quality Assurance (QA) and Theory Z were posited as frameworks. Recommendations such as more periods should be allocated for completion of mathematics syllabus before exposing students to external examinations and others were postulated.*

Keywords: *Time Frame, Syllabus completion, Mathematics, Time table and Examination.*

Introduction

Time is a universal phenomenon without a single, generally accepted universal definition. It is so important that everybody, both whites and blacks, literates and illiterates, rich and poor, are all affected by it. It is fair to all, as it has no fear nor favour for any individual or corporate bodies. If considered as an umpire, it is unbiased and impartial.

Ebong in Agabi (2010:99) defined “time as a continuum in which events succeed one another from the past through the present to the future”. By this definition, time is defined based on series of similar, indispensable events taking place one after another both in the past, the present and even in the future.

However, the British Broadcasting Corporation (BBC) English Dictionary defined time as what we measure in hours, days and years. It further defined it as the period that something happens. Here, the definition of time is based on duration or period, which are in hours, days and years.

From the foregoing, time can be defined as the duration or period similar or different events do occur, either in succession or not. It could be in hours, days, years, decades, centuries, etc.

In education, time is an indispensable asset. It is an educational resource. According to Agabi (2010:99), *“time is an educational resource that is highly limited in supply and critical but often taken for granted by the providers of education. It is so important and useful that each school activity is regulated by it”*.

Maduagwu and Nwogu (2006:64) posited that different tasks need to be allotted time and emphasized the need for proper time management. Lunenburg and Ornstein (2008:216) gave six basic ways to structure time as withdrawal, rituals, past times, activities, games and authenticity.

In Hoy and Miskel (2008:9), Taylor and his followers discovered through time and motion studies that by systematically undergoing a given task over a period of time, that the most efficient way in lesser time can be developed. To Agabi in Agabi, Okorosaye – Orubite, Ezekiel-Hart and Egbezor (2005:105), school activities are carried out within a specific time which gives credence to the existence of such registers as academic calendar, time table, lesson period, mid-term break, time book, etc. The above simply point to the fact that time is an indispensable tool to an individual or a corporate body. Time should be allocated to different activities of the day, week, month, year and so on. Proper time allocation to different activities gives rise to time management. The length of time allotted for or used for something is simply referred to as time frame (Oxford Advanced Learner’s Dictionary, 2001). School activities like morning devotion, lesson periods, breaks, preps, dining, labour, others, are regimented by time frame (Maduagwu and Nwogu, 2006). According to Agabi (2010:99), *“all school system activities are carried out within a time frame which may be limited to minutes, hours, days, months or even years”*.

It is important to emphasize that time-frame for each activity of any day, week, year, etc should be structured in the form of time-table. According to Nnabuo in Nnabuo, Okorie, Agabi and Igwe (2005:260), time-table is a document that illustrates time, place (room), subject and periods of each school subject in a week and term. It provides orderly direction and avoid clashes as teachers attend lesson at the allocated time and place. In a nutshell, a time-table is a schedule of period and place of various school activities. Emphasize need to be made here that time-frame should match the type of activity for it, otherwise, it will result to wastage of time or incompleteness of required activity.

Insufficient time-frame for subject syllabus result to inability of the subject teacher to complete the syllabus and prepare students for external examination. It is relevant we get a working definitions of subject syllabus and scheme of work.

Nnabuo in Nnabuo, et al (2005) opined that any document which shows how each subject should be taught and the details through which it should be treated is a

subject syllabus. Aiyepetu (2006:142) outlined the basic content of a teaching syllabus as:

- (a) Topics to be taught at various levels in the school,
- (b) Specific behavioural objectives which should indicate knowledge to be acquired after the teaching of any given topic,
- (c) The content of all the topics selected for inclusion in the syllabus and
- (d) Materials and suggested activities for teaching listed topics.

He advised that where a national examination syllabus is available, the school teaching syllabus should be based on it. He defined scheme of work as a breakdown of the syllabus for work planned to be covered weekly. Nnabuo in Nnabuo, et al (2005:261) describes scheme of work as breaking down into topics of a subject to be covered on a weekly basis of each school term.

Students should be encouraged to get good subject textbooks, which among other things, should adequately cover the syllabus.

Research Methodology

This study employed a combination of the analytical study of the 2009/2010 Academic Session as a resource document and other materials used were textbooks, articles and reports. These materials were selected in a fashion that looks like randomized sampling procedure and were assessed in terms of validity and value. Scott's four overlapping validity criteria which are authenticity, credibility, representativeness and meaning served as a frame work (Agabi, 2010:96).

Theoretical Framework

Time allocated for teaching and learning of mathematics in Secondary Schools in Omoku Town, Rivers State is inadequate and insufficient. This is traceable to the short time available to school activities. Regular public holidays, strikes which leads to closure of schools and other forms of holidays reduces the period of time for complete school activities. In effect, there is reduction in available time for teaching and learning and other school functions.

Teachers are not able to complete their subject syllabus and adequately prepare students for external examinations. Subsequently, the result of such incomplete syllabus is mass failure in schools external examination, loss of self-confidence by students leading to all forms of examination malpractices, occult practices, militancy, joining of gangs, armed robbery, prostitution and other forms of social vices. In the light of the above, efforts need to be made by all stakeholders in the education discipline: teachers, students, administrators (principals), parents, host communities, government and examination bodies to alleviate this ugly trend in our schools. The frameworks for this research study is based on three theories, which are Total Quality Management (TQM), Quality Assurance (QA) and Theory Z.

Total Quality Management (TQM) by W. Edwards Deming in 1982 stipulates *inter alia* that:

(i) Excellent performance of students in external examinations should be the primary focus of the school,

(ii) The school must be dedicated to continual improvement, personally and collectively.

(iii) School management must create the enabling environment for excellent performance of students.

Lunenburg and Ornstein (2008:52); Okorie and Uche in Nnabuo, Okorie, Agabi and Igwe (2005:45-56) and Emenalo in Babalola and Ayeni (2009:751-753) all agree to the above.

It is obvious that allocation of more periods for the teaching and learning of mathematics or recruitment of more mathematics teachers for the short available periods will help in adequately preparing students for external examinations. Aiyepoku (2006:146) advocated a generous allocation of teaching periods per week for mathematics.

Quality Assurance (QA) by the chief proponent of fault free product, Crosby, ensures that proactive and precautionary measures are taken before and during production to ensure that no wastage and no defect is recorded. (Okorie and Uche in Nnabuo, et al, 2005:57 and Awe in Babalola and Ayeni, 2009:72).

Applying this to our discussion, it is the administrator's duty to make sure that the quality and quantity of teachers are adequate for the time frame for the teaching and learning of mathematics. The teachers on their part should make the best use of the allocated time. Aiyepoku (2006:147) emphasized that proper preparation before each lesson, effective use of teaching aids, giving of regular exercises during lesson, assisting each student during lessons to correct errors encountered while solving problems are measures teachers should adopt in teaching and learning of mathematics.

Theory Z by William G. Ouchi around 1981 emphasizes concern for people and participative and consultative decision-making. Hoy and Miskel (2008:179-181), Lunenburg and Ornstein (2008:77-79) and Peretomode (2008:33-38) all agree that the basic premise of theory Z is "that involved workers are the key to increased performance in an organization".

From the above theories, we can deduce that student's poor performance in external examinations are attributable to a lot of variables which inadequate preparation and incomplete syllabus before embarking on such examinations is one of them. A collective effort of all stakeholders is needed to alleviate the situation.

Analytical Study of the 2010 Academic Session

Span of 2009/2010 Academic Session:

| | | | |
|------------------------------------|---------------------|---|---|
| Began 13 th Sept., 2009 | Total of 52 weeks | = (52x7) days | } |
| Ended 11 th Sept., 2010 | | = 364 days | |
| Saturdays and Sundays | | (Note: 1 week = 7 days) = 52 x 2 days = 104 days | |
| Remaining days | 364 days – 104 days | = 260 days. | |

Issues of 1st Term, 2009/2010 Academic Session

Span: 13th Sept., 2009 to 9th Jan., 2010

- Mid-term break (30th Oct., 2009 to 2nd Nov., 2009) - 2 days
- Public holidays:
 - ❖ El-die Fitri holiday (21st & 22nd Sept., 2009) - 2 days
 - ❖ Independence Day (1st Oct., 2009) - 1 day
 - ❖ Salah Days (26th & 27th Nov., 2009) - 2 days
- 1st term, holidays (19th Dec., 2009 to 9th Jan, 2010) (3 weeks) - 21 days
- Total for 1st Term - 28 days

Issues of 2nd Term, 2009/2010 Academic Session

Span: 10th – Jan, 2010 to 24th April, 2010

- Mid-term break (19th Feb., 2010 to 22nd Feb., 2010) - 2days
- Public holiday:
 - Moslem Idi-Malud (26th Feb., 2010) - 1day
- 2nd term holidays (3rd April, 2010 to 24th April, 2010) (3 weeks) - 21days
- Total 2nd term - 24 days

Issues of 3rd Term, 2009/2010 Academic Session

Span: 25th April, 2010 to 11th Sept., 2010.

- Mid-term break (6th June, 2010 to 9th June, 2010) - 2days
- Public holidays:
 - ❖ Workers’ Day (3rd May, 2010) -2 days
 - ❖ Death/Burial of President Yar’ Adua (6th May, 2010) - 1day
 - ❖ Children’s Day (27th May, 2010) - 1day
 - ❖ Democracy Day (29th May, 2010) - 1day
- 3rd term holiday (24th July, 2010 to 11th Sept., 2010) (8 weeks) - 56 days
- Total for 3rd term - 62days.

Grand total of holidays = total for 1st term + total for 2nd term + total for 3rd term
 = 28 days + 24 days + 62 days = 114 days.

Days secondary schools were opened for classes in the 2009/2010 academic session = (260 - 114) days = 146days

Days secondary schools were on holidays for 2009/2010 academic session = (364 – 146) days = 218 days

$$\% \text{ of days secondary schools opened for 2009/2010 academic session} \\ = \frac{146\text{days} \times 100\%}{364\text{days}} = 40\%$$

% of days secondary schools were on holidays in 2009/2010

$$\text{academic session} = \frac{218\text{days} \times 100\%}{364\text{days}} = 60\%$$

From the above analysis, secondary schools spent 60% for holidays while only 40% of the entire 2009/2010 academic session was used for school activities.

Note: Some schools have less than 40% in 2009/2010 session for school activities due to other internal holidays not captured in this analysis. Also, other academic session(s) may have less than 40% for school activities. A typical example is the current 2010/2011 academic session.

WAEC Syllabus for Mathematics in the 2009/2010 Academic Session

The West African Examinations Council (WAEC) has seven main topics broken down to thirty-seven sub-topics for prospective candidates of the West African Senior School Certificate Examination (WASSCE) General Mathematics/Mathematics (Core) Syllabus for the 2009/2010 Academic Session (WAEC, 2009:343-355).

Secondary Schools in Omoku Town and Time Frame for Teaching and Learning of Mathematics in the 2009/2010 Academic Session.

There are about eight recognized secondary schools in Omoku Town, Rivers State. Five of them are private while only three are public secondary schools. An analysis of the time allocated for teaching and learning from their respective time-tables range from two (2) periods of forty minutes each weekly to just one period of forty minutes weekly.

Also, the number of mathematics teachers were two at most and only one in some schools.

Comparison of Time Frame and Syllabus Completion of these Secondary Schools in lieu of Teaching and Learning of Mathematics.

As earlier posited, the number of mathematics teachers in both private and public secondary schools in Omoku town, Rivers State is grossly inadequate. The implication of this is over utilization of manpower which will result to low production. On the other hand, the time frame for the teaching and learning of mathematics is insufficient. Aiyepoku (2006:146) advocated nothing less than five periods of forty minutes weekly for SS One and Two and a little less than that for SS Three if the students are to be thoroughly prepared for external examinations.

Rosenshine and Furst in Lunenburg and Ornstein (2008:454-455) identified student opportunity to learn, that is, the teacher's coverage of the material or content in class on which students are later tested as one of five teacher processes that show the strongest correlation to positive outcomes. To Alutu and Ochuba in Okafor, Ekpo, Igwe, Eya and Okoye (2008:54), "*inadequate teaching and preparation of students before examination is one of the reasons students involve in examination malpractices*".

This is true as no student wants to fail. Ukoh and Ajanaku in Oyatoye, Olafimihan, Adeoye, Sabi, Alao, Fashiku and Abdusalam (2010) also support this view.

To lend support to the issue at stake, Aiyepoku (2006:148) opined that adequate coverage of the examination syllabus is one of the recognized requirement for students writing public examinations in mathematics subject. Nnabuo in Nnabuo, et al (2005:261) emphasized that effort should be made by school executives to ensure

compliance by teachers and a revisional feedback built in to allow adequate preparation of students for examination.

Emenalo in Babalola and Ayeni (2009:757) posited that attention has to be focused, among other things, on what goes on in the classroom between the staff and students in terms of the content of course coverage, quality of teaching and actual contact hours utilized. This is true as poor inputs will definitely yield faulty output.

Agabi in Agabi, et al (2005:105) identified poor academic results arising from inability to complete school syllabus as a wastage which occurs when the importance of time is ignored in the execution of school activities.

Implications of Insufficient Time Frame and Inconclusive Subject Syllabus

Since insufficient time frame cannot enable teachers to complete mathematics syllabus and prepare students for external examination eternal examinations, the following implications are possible:

(1) Mass Failure in Public or External Examinations

2009/2010 WAEC result has it that only 24.94% of the total candidates obtained credits in English Language, Mathematics and at least, three (3) other subjects; 2009/2010 NECO result reveals that only 22.99% of candidates in Rivers State obtained five credit passes including Mathematics and English Language.

(2) Incessant Examination Malpractices in Public or External Examinations. It is no more a news to hear of examination malpractices in external examinations, rather, what may be news is that a public or external examination was carried out without any examination malpractices.

(3) Dislike for the Subject and Development of Phobia;

People generally consider mathematics to be difficult. Insufficient preparation of students for external examination will result to dislike for the subject and justify the strong, unreasonable fear and hatred some already have for it.

(4) Loss of Aims of Teaching the Subject:

Aiyepoku (2006:141) identified the following aims/objectives of teaching mathematics, *inter alia*:

- (a) To develop computational skill,
- (b) To develop precise, logical and abstract thinking,
- (c) To stimulate and encourage creativity,
- (d) To acquire the ability to teach mathematics.

These aims and objectives may be completely lost as a result of this.

(5) Creation of Lacuna

One of the disadvantage or implication of this is that it will create a gap between what the student knows and what he/she is supposed to know.

(6) Deepening of the falling standard in education:

If the issue at stake is not addressed, it will deepen further the issue of the falling standard in Nigerian educational system.

Conclusion

It was revealed from the study that the time frame for syllabus completion of senior secondary mathematics is insufficient. This makes it impossible to complete

subject syllabus and hence, students' preparation for external examinations are inadequately. The result of this is failure in school external examinations.

Recommendations

In other to curb persistent student failure in external examinations like WAEC and NECO, the following recommendations are necessary:

(1) Government should recruit qualitative and quantitative mathematics teachers and deploy them to schools where mathematics teachers are in short supply. In addition, there is need to reduce incessant and unnecessary public holidays.

(2) Principals should allocate more periods for mathematics classes and supervise accordingly.

(3) Teachers should prepare well before lesson, use teaching aids, avoid story telling and distractions while aiming at achieving set goals. They should also attend seminars, conferences, from time to time for improvement.

(4) Students should pay attention in class, ask questions and do further/additional studies at home.

(5) Parents should provide relevant textbooks, materials and conducive atmosphere for during and after school studies for their children.

(6) Examining bodies like WAEC and NECO should use these teachers for marking of answer scripts, expose them on topics for more concentration are needed and possibly set questions on topics covered.

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INTEGRATING SELF-PACED e-LEARNING WITH CONVENTIONAL CLASSROOM LEARNING IN NIGERIA EDUCATIONAL SYSTEM

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Abstract: *The advances in Information and Communication Technology (ICT) and its rapid growth are changing the way people use, develop, process and disseminate information and instruction {technology}. There is no doubt that ICT use in the classroom increase student's motivation to learn, engage in learning and give independence in learning. Evidence shows that there is a correlation between using ICT in schools and students academic achievement across a range of courses. Student are comfortable and fulfilled in an ICT environment and using this as a bench mark, [integrating it with a self-paced student centered learning] in conjunction with the conventional classroom learning will go a long way to improve learning thereby increasing academic performance of the students at large. This paper explores the potential of self-paced e-learning alongside with conventional classroom learning and the positive impact the integration of the two can have on student's academic performance when incorporated into the Nigeria Educational system.*

Keywords: *Information and Communication Technology (ICT), Self-paced e-learning, Conventional Classroom Learning, Integration, Nigeria Educational System*

1.0 Introduction

ICT has been used in educational settings since its inception, but recent empirical research has affirmed that it plays a vital role in high-quality learning and teaching. Such research insights have shown that advances in technology have opened up new possibilities for the way in which teachers educate their classes, giving potential for innovative ways to encourage students to become more engaged in their schooling. To enable the best possible outcomes for their students it is vital that schools are able to keep up with this progress. (Condie and Munro, 2007).

In an extensive review of the ICT and performance levels in the UK Cox, Abbott, Webb, Blakeley, Beauchamp & Rhodes (2003) found evidence of positive effects on achievement levels in students across a wide range of subjects, which particularly indicates that in European schools ICT has positively enhanced

performance in the primary years, particularly in the primary language of the country. Schools that have greater ICT infrastructure perform more highly than schools with less developed ICT infrastructure. Higher motivation is reported, particularly for primary students, with the use of ICT such as interactive whiteboards.

The majority of teachers report that students are more highly motivated, which in turn affects behaviour and communication when using computers and the internet in class. In order to reach European targets set for the year 2010, the numbers of computers in schools have increased dramatically in recent years (Balanskat and Blamire, 2007). Two thirds of teachers report being very confident in their usage of word processors, and a third feel that they have the necessary skills to develop electronic presentations. Almost all teachers in the UK and Denmark report using ICT regularly as a teaching aid, whereas in other countries such as Greece or Latvia, only a third of teachers report doing so.

Greater gains of achievement in students are seen when the teacher uses ICT in a planned, structured way that is integrated effectively into their lessons (Higgins, 2003).

2.0 Conventional Classroom Learning

According to Martin and Eugenio (1992), conventional classroom teaching is conceived as the transmission of “knowledge” or “information” from the teacher to the student. The teacher in this instance prepares for the lesson to be taken, therefore takes the most active role in the classroom [provide and guide] and students are required to listen, take notes, memorize, and be able to demonstrate their knowledge by filling in the proper blanks or choosing the appropriate alternative on the test.

Knowledge, in this view, is a set of beliefs that accurately mirrors the world. The emphasis in the classroom is on transmitting these beliefs clearly and precisely. Rarely, then, is interaction between teacher and student genuinely initiated by the latter. The teacher not only has all of the answers but also all of the relevant questions. Students are not, at the first instant are presumed to know nothing and may not necessarily contribute or ask questions to which the teacher can give clear and definite answers.

The conventional classroom has a certain theory of knowledge, in this view, is acquired passively rather than actively, is more the product of observation than of exploration. Principally, education has two aims: first, the transmission of the knowledge that has been acquired firsthand by those who have preceded us (which Bertrand called “knowledge by description”), and, second, to make sure that the student's mind remains accurately aimed and highly receptive-- so that it is itself capable of acquiring “knowledge by [direct] acquaintance”(Bertrand 1946).

The most vital relationship in a conventional classroom is between the teacher and student, and this is so, because the teacher transmits what he has learnt in the past and in tune with the present to the student. The tutor-students ratio is kept low to be able to produce the best result [the ideal learning situation is one to one]. Schools teach students in groups only because it is financially impossible to have a one-to-one teacher-student ratio. Keeping the ratio very low will improve teachers productivity and also beneficial to students with slow learning prowess.

Underlying the conventional wisdom, as Richard Rorty (1979) has emphasized, is a certain metaphor, or picture, that has dominated epistemology since Descartes. This is the picture of the mind as a great mirror containing various representations--some accurate, some not--of nature. It is the task of epistemology to identify the foundation and to provide a method that, when properly employed, will “polish” the mirror and ensure that all that is represented on it accurately reflects, or is true of, the world.

There is an important difference between students learning in a group and learning as a group. Students in conventional classrooms learn in groups largely because financial considerations make it impossible for each student to have his or her own tutor. The emphasis is on the transmission of “knowledge” from active teacher to passive student, and the (financially prohibitive) ideal is a one-to-one teacher-student ratio. In contrast, the sort of classroom envisages-- what is characterize as a “community of inquiry”--regards group learning as essential to education. Members of a class who work *as* a group learn to see themselves as active participants in the discovery, analysis, and justification of claims to knowledge. As such, they constitute a model of the nature and structure of knowledge as it exists outside of the classroom. The emphasis is on dialogue, interaction, and a joint cooperative undertaking guided by a skilled and sensitive teacher who is him- or herself an interested inquirer.

Conventional learning typically takes place in an identifiable classroom space, usually in a school or in an institution dedicated to learning. A traditional classroom usually has a number of specific features, including:

- an instructor/trainer who delivers information to students
- a number of students/learner who are all physically present in the classroom and regularly meet at a specific time
- student participation in lectures and discussions
- a set of chairs and desk arrange in rows and columns

2.2 Advantages of Conventional Classroom Learning

The following are some of the advantages of Conventional Classroom Learning

- Provides interactive classroom setting that promotes the open exchange of ideas: Having numerous students learning in the same classroom has the added benefit of allowing students to exchange ideas and questions with one another providing another valuable learning medium that online environments cannot replicate. First-hand interaction with the educating professor also allows for ideas to be exchanged freely and without any communication barriers.

- A classroom creates an environment of learning. While a student is attending a class s/he learns how to behave in an appropriate manner, how to make friends and interact with people. Such learning is not possible in online courses as the individual would interact with computer.

- In a classroom the teacher decides the important areas of study and imparts the same knowledge to all the students, though the way each student absorbs information is different. The teacher can also identify learning issues with particular students and

provide support. Such an environment is absent in online learning programs as the students are left on their own to study and have to develop the necessary skills alone.

- Exchange ideas with peers, not only about the training course but about other current issues.

- Benefit from a face-to-face learning approach that allows learners to address any difficulties or areas of confusion immediately. A classroom environment offers students the opportunity to have face-to-face interactions with their peers and instructors. This is an added social benefit as well as an educational aid. Because students see the same peers in class every session, they get a chance to form friendships. In the case of higher learning, pupils can find potential lifelong professional connections. On the educational side, students get a chance to participate in a lecture or class discussion physically. If something is not understood, interrupting to ask for clarification is always an option. The best classes not only include, but also insist that students get hands-on experience with the subjects being taught. This is particularly useful for those preparing for certification exams because analysis and problem-solving skills are learned best through trial and error, with access to a helpful mentor as needed.

- Access to a savvy, experienced instructor permits students to apply what they learn to real-world needs by asking questions and looking for connections to the job. Because learning works best when materials are relevant, good instructors add real value.(Ed, 2003)

- In some cases, the classroom environment is the only style of education the students know, and the change of pace online classes offer may prove difficult to adjust to. Students get the opportunity for hands-on, structured learning instead of being presented with the course books, written lectures and self-directed activities distance learning provides. Suddenly straying from the standard learning experience may add unexpected strain academically, making the class material more difficult in the process. At this point, they enjoy the interaction between them and their teachers.

2.3 Limitations of Conventional Classroom Learning

Like other instructional methodologies, conventional classroom learning has its limitations.

- Neglect problem solving, critical thinking, and higher order learning skills: The classroom setting can also hinder ones ability to learn by allowing other, more vocal, students to dominate the bulk of the discussion environments. Quieter personalities are limited in their communication options for exchanging ideas and information

- Encourage passive learning: Depending on the level of interaction in the classroom setting, shy students may be allowed to attend classes without providing alternative ways to communicate ideas. Forcing students to learn by vocal exchange with a professor may limit their ability to learn.

- Ignore individual learning differences between students: Classrooms environments tend to group students together in large number often making it difficult

for instructors to isolate learning deficiencies and provide the necessary close attention that individuals may need to learn.

- A campus-based learning experience means the class schedule is predetermined and not subject to change. Students must shape their personal schedules around school instead of the other way around. If plans unexpectedly change or an emergency comes up, the student cannot adjust the class schedule to turn in the work at a different time. If a scheduling conflict arises between work and school, students are forced to choose between their education and their income.

- Knowledge conveyed in the classroom tends to be situated in the context of the classroom and the school rather than the context in which the knowledge was created (Henning, 1998). This contextual dichotomy has been shown to negatively impact the learning process, adversely effecting learner motivation in particular.

- The teacher is the center of attention, not the students. That was the way education was, and still is in many regards. Learning follows whatever pace is dictated by its training materials, by the time allotted for the class and the instructor's approach.

- With classroom learning, students must physically attend the courses to get credit for attendance. Those who must travel long distances to get to school must allot enough time to arrive punctually, particularly in instances where inclement weather is involved. A long commute may also mean a hefty transportation cost over a long period of time which, when combined with the cost of education, may present an issue to financially challenged students.

3.0 Self-Paced e-Learning

As cited by Gurmak, John and Harvey(2005), e-Learning is construed in a variety of contexts, such as distance learning, online learning and networked learning (Wilson 2001). In the context of this paper self-paced e-learning is the one that utilizes information and communications technology (ICT) to promote educational interaction among students and their teachers [content provided] . Volery (2000) argues that the fast expansion of the Internet and related technological advancements, in conjunction with limited budgets and social demands for improved access to higher education, has produced a substantial incentive for universities to introduce eLearning courses.

Self-paced or individualized learning is defined as learning directed by the individual in order to meet personal learning objectives. Although self-paced learning and individualized learning have essentially the same meaning, there are some subtle differences. In self-paced learning, the learner controls the pace of the learning process. For example, in a self-paced computer-based course, two students might begin the course on the same day but one may finish days ahead of the other. By contrast, in individualized learning, there may be some time parameters. For example, a structured on-the-job training (OJT) course may require the individual to reach specific points in the course at specific times. The learning is still targeted to the individual, but the pace of learning may be partially controlled by the trainer or facilitator. Here, the term self-paced learning is used to describe both approaches.

Self-paced courses provide a convenient alternative to the traditional classroom. In fact, recent meta analysis (Means, 2009) research is showing that online distance education students outperform campus based students.

Spring (2004) proposed five teaching and learning modes in which e-learning can provide gains in effectiveness, quality and cost benefits:

- Classroom interactive learning: between students and teachers and among students

- Independent learning: where students or teachers are learning and studying alone in a variety of environments and modes including aspects of self directed lifelong learning;

- Networked learning: through contact with groups, individuals and sources where quite different influences and experiences are creating a qualitative difference to both standard and blended teaching and learning;

- Organizational learning: including learning communities, learning precincts and learning cities; and

- Managed learning: where education technology is creating, through computer managed communication and learning management systems, capability to enable teachers to negotiate and provide individualized curricula and learning experiences for each student.

3.1 Examples of Self-Paced Learning

In self-paced learning, the content, learning sequence, pace of learning and possibly even the media are determined by the individual. Examples of self-paced learning include:

- Reading a book to acquire new information about a topic.
- Reading a book, listening to accompanying audiotapes and completing exercises in a workbook.

- Reading a reference manual and watching a video.

- Completing a computer-assisted learning (CAL) course that uses interactive computer modules for knowledge transfer and one-on-one work with the clinical trainer for skills transfer, first with models and then with clients.

- Completing a CAL distance learning course on the Internet (knowledge transfer only).

- Participating in a structured OJT clinical skills course that involves reading assignments in a reference manual, completing exercises in a workbook and working one-on-one with the clinical trainer for skills transfer, first with models and then with clients.

3.2 Advantages of Self-Paced e-learning

According to Anderson (2005), Self-paced e-learning maximizes individual freedom. Rather than making the obviously incorrect assumption that all students learn at the same speed, have access and control over their lives to march along with a cohort group of learners or are able, despite divergent life circumstances, to begin and end

their study on the same day, self-paced study correctly puts the learner squarely in control.

In most group-based (conventional classroom) courses, the trainer attempts to present the information to the typical or average learner. The more capable learners may become bored or frustrated, while the less capable learners may feel lost or overwhelmed. By contrast, a self-paced approach allows the learner to make many of the decisions about when, where, what and how quickly to learn. The trainer functions as a guide and facilitator of learning.

The other advantages to this approach of learning are:

- Learners can learn information and skills when they need them.
- Learners are not as dependent on the structure and pace established by the trainer.
 - Assuming control of the learning process is highly motivating for many learners.
 - Each learner has the same level of participation in the learning process. Participants are active rather than passive, and assume greater responsibility for their own learning.
 - Because most self-paced learning courses allow participants to begin and end a segment of the training course at any time, it is an efficient use of training time and resources.
 - Learning activities can be organized sequentially, because each component in a self-paced course has objectives that must be met before proceeding to the next component.
 - Self-paced learning provides trainers with the time to focus more attention on participants who need assistance. Although participants who are not having difficulties certainly should not be neglected, this approach allows the trainer to spend time with participants who do require assistance.
 - Essential equipment, materials and supplies used can be kept at a minimum because only one or two participants may be involved in training at any one time.

3.3 Limitations of Self- Paced e-Learning

As with any approach to learning, there are also limitations to consider:

- Most learners have not learned this way before, so they may feel uncomfortable with learning on their own.
 - Students may lack the necessary motivation to work independently.
 - Learners may have poor reading skills, because most self-paced learning approaches require reading, this can be a major limitation.
 - Learners may possess poor time management skills. Procrastination may make the self-paced learning process less effective than it can be.
 - Trainers may feel that they do not have time to manage a self-paced learning system.
 - It may be challenging and time-consuming to design and develop the appropriate learning materials, in either print or electronic format.

- Without good planning, it may be difficult for the trainer to arrange for times to meet with the participant.
- Trainers may find that documenting, evaluating and updating Students progress is very time-consuming.

4.0 Advantages of the Integration of Self-paced e-learning and Conventional Classroom Learning

The following are some the benefits that would be derived from integrating self-paced e-learning and conventional classroom learning:

- The Self-paced e-Learning is not an exclusionary alternative to the traditional classroom, but really are an extension of that classroom into cyber-space and global networking. Traditional classroom teaching and learning are addressed with the leverage provided by technology-based instruction and testing.

- The power of the integration is in sequencing the activities, engaging the learner in different ways, and then optimizing the combined learning effect. The content of the course will be made interactive, graphical, voice enabled and with real life simulations.

- The student can make use of the advantages of self-paced e-learning by going through beforehand the course modules to be handled in the next class, making use of the interactive sections available in form of quiz. When such students appear in class, treating the same course module will be simplified and the student can learn better from the lecturer by asking questions on those aspects that were not clear on the self-paced e-module

- The learning process in some people takes quite a bit of time, so a self-paced e-learning setting is ideal for the patience and environment required. Such people can now make use of the advantage of going through the module online moving at their own pace to comprehend what was initially taught in class.

5.0 Conclusion

This research proposes a combination of online, intranet and internet (self-paced e-learning) and conventional classroom learning style for courses. This will allow the benefits of both types of learning to be realized. The truth of the matter is that there are advantages and disadvantages to every type of learning environment. It is best to use the advantages that each method offers to their fullest extent. It is obvious from this research review, that a combination of self paced e-learning and classroom learning to convey subject matter to students will be the best teaching method. This will on the long run translate on their overall performance of students in school.

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USING INFORMATION AND COMMUNICATION TECHNOLOGY IN A COLLABORATIVE CLASSROOM TO IMPROVE STUDENT ACHIEVEMENT

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Abstract: *This paper discusses the fundamentals of cooperating teaching - the role of general subjects teacher as well as the role of the special education teachers in a collaborative classroom. Enhances was laid on two roles of the special education teacher which are - permanent and temporary co-teaching roles. Also discussed were necessary steps needed for effective planning for collaborative teaching. The paper later gave examples of some technology devices that could be used for educational application and steps to follow to improve students' achievement through the use of ICT. Finally, conclusion was drawn.*

Keywords: *Cooperating teaching, inclusive classroom, special education, collaboration, ICT.*

Introduction

Historically, teachers have worked in isolation - one teacher to a classroom. As children with disabilities entered the public schools in the 1970s, they were taught in separate classrooms with their own teachers. Over the past 25 years, these students have slowly moved into the flow of the regular classroom, thus the use of the term "mainstreaming." (Suzan Ripley, 1997). He further stated that students, although they were mainstreamed for selected subjects or parts of the day; they were not considered part of the typical class. Now the philosophy is to include all students in the same class, which has brought about teams of general education and special education teachers working

collaboratively or cooperatively to combine their professional knowledge perspectives, and skills. The biggest change for educators is in deciding to share the role that has traditionally been individual: to share the goals, decisions, classroom instruction, responsibility for students, assessment of student learning, problem solving, and classroom management. The teachers must begin to think of it as "our" class. This Digest explores the facets of this new collaboration between general and special education teachers.

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classroom management. The teachers must begin to think of it as "our" class. This write-up explores the facets of this new collaboration between general and special education teachers.

What is Cooperating Teaching?

Cooperative teaching was described in the late 1980s as "an educational approach in which general and special educators work in co-active and coordinated fashion to jointly teach heterogeneous groups of students in educationally integrated settings (Suzanne Ripley, 1997). In cooperative teaching both general and special educators are simultaneously present in the general classroom, maintaining joint responsibilities for specified education instruction that is to occur within that setting" (Bauwens, Hourcade, & Friend, 1989).

This type of co-teaching actually has a number of names. The way this model works is that a content area teacher is in the classroom all the time. The special education teacher comes in and co-teaches one to three times a week. All students are able to benefit by having more face time with their teachers. Co-teaching gives each child that opportunity. For special needs children, this may mean help with reading a paragraph, learning a new language, or solving mathematical problems. Co-teaching brings special education's best practices, which are really best for all children, into normal classrooms where they can benefit all students.

The distinctive feature of cooperative teaching, which differs from earlier approaches, is that it is direct collaboration with the general education and special education teachers working together in the same classroom most of the day.

An effective team of teachers will work together as equal partners in interactive relationships, with both involved in all aspects of planning, teaching, and assessment. Areas for this collaboration will include curricula and instruction, assessment and evaluation, and classroom management and behavior. The key to making co-teaching work is joint planning. They must both know the entire curriculum so that they can switch back and forth and support each others efforts.

In developing and implementing cooperative teaching, school professionals experience great changes in the way they go about their daily work. To overcome the inevitable fears and stresses associated with change, the educators involved must feel that they are responsible for the change and that its success or failure lies directly with them (Bauwens & Hourcade, 1995).

The Role Played by Each Teachers in a Collaborative Classroom

In a collaborative model the general education and special education teachers each bring their skills, training, and perspectives to the team. Resources are combined to strengthen teaching and learning opportunities, methods, and effectiveness. The one point that clearly developed from this relationship was that both of them had expertise in many areas, and combining these skills made both teachers more effective in meeting the needs of all students (Dieker & Barnett, 1996).

Typically the primary responsibility of general education teachers is to use their skills to instruct students in curricula dictated by the school system. Also, the primary responsibility of special education teachers is to provide instruction by adapting and developing materials to match the learning styles, strengths, and special needs of each

of their students. In special education situations, individual learners' needs often dictate the curricula.

General educators bring content specialization, special education teachers bring assessment and adaptation specializations. Both bring training and experience in teaching techniques and learning processes. Their collaborative goal is that all students in their class are provided with appropriate classroom and homework assignments so that each is learning, is challenged, and is participating in the classroom process.

A Special Education Teacher's Role in an Inclusive Classroom

An inclusive classroom is one of the placement options for a student with a learning disability. This is the least restrictive form of education for special needs students and it allows the student to be included in a typical classroom environment with his or her peers.

There are two roles a special education teacher may play in an inclusive classroom — permanent or temporary co-teaching.

Permanent Co-Teaching

Permanent co-teaching offers students many advantages. In a permanent co-teaching arrangement, there is a content teacher, someone who specializes in a specific subject like history, and a special education teacher. The teachers share in the planning, implementing, and grading of lessons. This is great for all the students, not just those that fall under the special education umbrella. The one-on-one teacher to student time is increased because there is literally an extra teacher in the classroom. With an average classroom size of 20 to 30, each teacher could focus her attention on only 10 to 15 students. For a special needs student, this additional individualized contact is invaluable.

Planning for Effective Collaboration

Collaboration involves commitment by the teachers who will be working together, by their school administrators, by the school system, and by the community. It involves time, support, resources, monitoring, and, above all, persistence. However, the biggest issue is time - time for planning, time for development, and time for evaluating. Planning should take place at the district and the building levels, as well as at the classroom level.

District planning helps ensure that all resources will be available, including time, money, and professional assistance. District-level planning will take into consideration the effect change in one place will have on other settings. Building-level planning will assist the teams in being sure adequate support is in place to sustain new initiatives. Principals play an extremely important leadership role in facilitating collaborative efforts by instructional personnel.

Both district and building-level planning should provide staff development opportunities to encourage teachers and administrators to participate in classes, workshops, seminars, and/or professional conferences on cooperative teaching. Motivation is an important ingredient for success, but additional skills will be needed to realize the goals teachers set for themselves and their classes.

Planning also is a factor in selecting the students who will be part of the collaborative process. It is important to keep natural proportions of typical students,

students identified as being at risk, and students who have been found to have disabilities. Achieving a balanced classroom is easier at the elementary and middle school levels than at the secondary level, where a certain amount of grouping takes place with course selection.

A major consideration is in arranging planning times for co-teachers. Co-planning must take place at least once a week, according to studies. Planning sessions were viewed as priorities by both teachers; they refused to let other competing responsibilities interfere with their planning sessions (Walther-Thomas, Bryant, & Land, 1996). The planning must be ongoing to allow teachers to review progress on a regular basis, make adjustments, evaluate students, and develop strategies to address problems either in discipline or learning.

Walther-Thomas and her colleagues (1996) found that five planning themes were identified by co-teachers who considered themselves to be effective co-planners:

1. Confidence in partner's skills;
2. Design of learning environments for both the educators and students that require active involvement;
3. Creation of learning and teaching environments in which each person's contributions are valued;
4. Development of effective routines to facilitate in-depth planning; and
5. Increased productivity, creativity, and collaboration over time. Participants in collaborative programs agreed that the time required for planning does not decrease during the year, but the quality of instruction continues to improve.

Different Types of Technology and their Educational Applications

Many different types of technology can be used to support and enhance learning. Everything from video content and digital moviemaking to laptop computing and handheld technologies (Marshall, 2002) have been used in classrooms, and new uses of technology such as podcasting are constantly emerging.

Various technologies deliver different kinds of content and serve different purposes in the classroom. For example, word processing and e-mail promote communication skills; database and spreadsheet programs promote organizational skills; and modeling software promotes the understanding of science and math concepts. It is important to consider how these electronic technologies differ and what characteristics make them important as vehicles for education (Becker, 1994).

Technologies available in classrooms today range from simple tool-based applications (such as word processors) to online repositories of scientific data and primary historical documents, to handheld computers, closed-circuit television channels, and two-way distance learning classrooms. Even the cell phones that many students now carry with them can be used to learn (Prensky, 2005).

Each technology is likely to play a different role in students' learning. Rather than trying to describe the impact of all technologies as if they were the same, researchers need to think about what kind of technologies are being used in the classroom and for what purposes. Two general distinctions can be made. Students can learn "from" computers—where technology used essentially as tutors and serves to increase students basic skills and knowledge; and can learn "with" computers—where

technology is used a tool that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher order thinking, creativity and research skills (Reeves, 1998; Ringstaff & Kelley, 2002).

The primary form of student learning "from" computers is what Murphy, Penuel, Means, Korbak and Whaley (2001) describe as discrete educational software (DES) programs, such as integrated learning systems (ILS), computer-assisted instruction (CAI), and computer-based instruction (CBI). These software applications are also among the most widely available applications of educational technology in schools today, along with word-processing software, and have existed in classrooms for more than 20 years (Becker, Ravitz, & Wong, 1999).

According to Murphy et al, teachers use DES not only to supplement instruction, as in the past, but also to introduce topics, provide means for self-study, and offer opportunities to learn concepts otherwise inaccessible to students. The software also manifests two key assumptions about how computers can assist learning. First, the user's ability to interact with the software is narrowly defined in ways designed specifically to promote learning with the tools. Second, computers are viewed as a medium for learning, rather than as tools that could support further learning (Murphy et al, 2001).

While DES remains the most commonly used approach to computer use in student learning, in more recent years, use of computers in schools has grown more diversified as educators recognize the potential of learning "with" technology as a means for enhancing students' reasoning and problem-solving abilities. In part, this shift has been driven by the plethora of new information and communication devices now increasingly available to students in school and at home, each of which offers new affordances to teachers and students alike for improving student achievement and for meeting the demand for 21st century skills describe earlier. No longer limited to school labs, school hours and specific devices, technology access is increasingly centered on the learner experience.

Bruce and Levin (1997), for example, look at ways in which the tools, techniques, and applications of technology can support integrated, inquiry-based learning to "engage children in exploring, thinking, reading, writing, researching, inventing, problem-solving, and experiencing the world." They developed the idea of technology as media with four different focuses: *media for inquiry* (such as data modeling, spreadsheets, access to online databases, access to online observatories and microscopes, and hypertext), *media for communication* (such as word processing, e-mail, synchronous conferencing, graphics software, simulations, and tutorials), *media for construction* (such as robotics, computer-aided design, and control systems), and *media for expression* (such as interactive video, animation software, and music composition).

In a review of existing evidence of technology's impact on learning, Marshall (2002) found strong evidence that educational technology "complements what a great teacher does naturally," extending their reach and broadening their students' experience beyond the classroom. "With ever-expanding content and technology choices, from video to multimedia to the Internet," Marshall suggests "there's an unprecedented need

to understand the recipe for success, which involves the learner, the teacher, the content, and the environment in which technology is used."

Universal Design for Learning (UDL) takes advantage of the opportunity brought by rapidly evolving communication technologies to create flexible teaching methods and curriculum materials that can reach diverse learners and improve student access to the general education curriculum (Rose & Meyer, 2002). UDL assumes that students bring different needs and skills to the task of learning, and the learning environment should be designed to both accommodate, and make use of, these differences (Bowe 2000; Rose & Meyer, 2002). To promote improved access to the general curriculum for all learners, including learners with disabilities, Rose & Meyer (2002) have identified three key principles or guidelines for UDL:

1. Presenting information in multiple formats and multiple media.
2. Offering students with multiple ways to express and demonstrate what they have learned.
3. Providing multiple entry points to engage student interest and motivate learning.

For example, printed reading materials pose substantial challenges to the learning of students with disabilities (J. Zorfass: personal communication, October 2005). Technology can assist with such difficulties by enabling a shift from printed text to electronic text, which Anderson-Inman and Reinking (1998) assert can be modified, enhanced, programmed, linked, searched, collapsed, and collaborative. Text styles and font sizes can be modified as needed by readers with visual disabilities; read aloud by a computer-based text-to-speech translators; and integrated with illustrations, videos, and audio. Electronic text affords alternative formats for reading materials that can be customized to match learner needs, can be structured in ways that scaffold the learning process and expand both physical and cognitive access, and can foster new modes of expression through revision and multimedia (J. Zorfass: personal communication, October 2005). It represents one way that technology can support the achievement of students with disabilities.

Steps to Improving Students Achievement Through ICT

Teachers can take the following steps to improve student achievement through technology.

- Determine the purpose of using technology in the classroom, as determined by the specified educational goals. Is it used to support inquiry, enhance communication, extend access to resources, guide students to analyze and visualize data, enable product development, or encourage expression of ideas? After the purpose is determined, select the appropriate technology and develop the curricula. Create a plan for evaluating students' work and assessing the impact of the technology.

- Coordinate technology implementation efforts with core learning goals, such as improving students' writing skills, reading comprehension, mathematical reasoning, and problem-solving skills.

- Collaborate with colleagues to design curricula that involve students in meaningful learning activities in which technology is used for research, data analysis, synthesis, and communication.

- Promote the use of learning circles, which offer opportunities for students to exchange ideas with other students, teachers, and professionals across the world.
- Encourage students to broaden their horizons with technology by means of global connections, electronic visualization, electronic field trips, and online research and publishing.
- Ensure that students have equitable access to various technologies (such as presentation software, video production, Web page production, word processing, modeling software, and desktop publishing software) to produce projects that demonstrate what they have learned in particular areas of the curriculum.
- Encourage students to collaborate on projects and to use peer assessment to critique each other's work.
- In addition to standardized tests, use alternative assessment strategies that are based on students' performance of authentic tasks. One strategy is to help students develop electronic portfolios of their work to be used for assessment purposes.
- Ensure that technology-rich student products can be evaluated directly in relation to the goals for student outcomes, rather than according to students' level of skill with the technology.
- Create opportunities for students to share their work publicly--through performances, public service, open houses, science fairs, and videos. Use these occasions to inform parents and community members of the kinds of learning outcomes the school is providing for students.
- Learn how various technologies are used today in the world of work, and help students see the value of technology applications.
- Participate in professional development activities to gain experience with various types of educational technology and learn how to integrate this technology into the curriculum.
- Use technology (such as an e-mail list) to connect with other teachers outside the school or district and compare successful strategies for teaching with technology info@ncrel.org (2005).

Conclusion

The concepts of individualized instruction, multiple learning styles, team teaching, weekly evaluation, and detailed planning are all of direct benefit to students. The purpose of the collaboration is to combine expertise and meet the needs of all learners.

It is important that teachers receive preparation and classroom support. It is also important that planning time continues to be available throughout the school year. "Most important, all students win by being challenged by collaborating teachers who believe that they are responsible for all children in the classroom" (Angle, 1996).

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FAMILY PEDAGOGY – RESEARCH DIRECTION AND SOCIAL AND PEDAGOGIC ACTION

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Abstract: *Considering the continuous amplification of the unit between psychocentrism and sociocentrism generated by the psychological and sociological curriculum substantiation, the current social pedagogy paradigm defines and analyzes education from the perspective of social requirements, having as its general function the optimization of the relationships between school and community, with consistent applications at the family level (family pedagogy). Family pedagogy as a research direction and social pedagogic action answers parents' need to be helped in educating their children as better as possible. The quality of a "good parent" requires effort and specialty training, continuous improvement and self-improvement, and is based on science, on competence and skill, supposing even a certain vocation. This study valorizes the perceptions, representations, motivations and attitudes of experts with a rich experience and serious concerns in supporting the educative function of family, interested in making parents responsible and involving them in their own shaping to change family practices and optimize parental behaviors in favor of the harmonious development of children's personality.*

Keywords: family pedagogy, parent education, socio-educational intervention

1. Argument

The globalization process, which is more and more visible at the contemporaneous life level, causes essential changes in the structure and functionality of social institutions, including at the school and family level.

Today, family is requested pertinent answers to the challenges of contemporaneous world in terms of adaptability, cohesion, creativity, efficiency, competence as to the organization of family life and especially as regards children's education.

Family is the first school of the child, the first educational environment. Italian pedagogue Fausto Telleri considers family as "a persistent and structural reality which creates and stabilizes human personality from a psycho-social point of view" (Telleri F., 2003, p. 23). The socialization process starts in the family through the values promoted therein, through the manifested attitudes and the expressed opinions, through the parents' behavioral modes. All these constitute for the child accessible concrete models, which are "good to assimilate". A reputed Romanian pedagogue considers that parental behavioral models are a "synthetic and generative construction, defining the articulated set of purposes, actions, practices, results and values, which are constant, specific, of the conduct of a family with children, oriented either to determine or to

condition or influence the nascent and/or resulting conduct from the perspective of their personality and the personality of their children.”(Neacșu I., 2010, pg.117)

The daily moral exercise of the child in the family is a preamble for its own family life but also for the social life. The parental care, the psychological atmosphere, the family’s values system constitute the main coordinates influencing the child’s development and creating for it the premises favorable to its social integration. The educational parental model, the family climate, the internal cohesion transfer to the children social values such as: self esteem, respect to the other, altruism, moral conscience, prosocial conduct, will. Such values shall help the young to integrate socially and shall contribute to its subsequent development both personally and professionally.

This study underlines the role and the importance of family pedagogy as a research direction and socio-educational action of family, a multidimensional ensemble of socio-educational interventions in favor of family mainly aiming at finalities of the type of changes at the level of parents’ conduct based on restructuring parental attitudes and competences through learning.

2. Methodology

This study is of exploratory qualitative type and is based on the focused interview (the interview guide -annex). Please find below the main stages in the performance of the focus group:

- *Establishment of the discussion theme*: the main discussion axes were presented, which allowed the identification and delimitation of the social and educational intervention area of pedagogues (form teachers) from the intervention area of psychologists in their work with parents (psychological counseling offered to family);

- *Establishment of the group structure* was made according to the following criteria: establishment of a medium homogenous group, considering that all those involved have the optimization of the activities with parents as their common point;

- The attraction in debates of certain representatives for all the professional categories interested in working with parents (teachers, school counselors, psychologists, social assistant, family doctor)

- The high recognition of the professional competences held by those involved in the debates

- *The drafting of the guide for the organization of the focused interview*:

- The establishment of questions (funnel questions, from general questions to specific questions; the preparation of open questions allowing the issuance of as many value judgments for this study as possible)

- The establishment of the team registering the debate results (1 observer and 1 assistant moderator)

- *The establishment of the meeting place and of the duration of the interview*: methodical cabinet within the Pitești University, 2 hours.

- *The performance of specific procedures*:

- Before starting the focus-group, the moderator introduced itself and mentioned its role in this group activity;

- The moderator presented the purpose of the focus-group and explained the rules of its performance (the fact that there are no correct or wrong answers, that the participants should speak loudly and in turns, all of them intervening with opinions, ideas; the fact that it is not consensus that is pursued but the exchange of relevant ideas and experiences).

- The moderator explained the necessity to record the discussion and ensured the participants of the confidentiality of discussions.

- *focus –group composition:*

- one moderator, university teacher, education sciences Phd;
- 6 form teachers with a rich practical experience in the field of educative activities from 6 school units of Pitești

- 2 school counselors from 2 Pitești high schools;

- 2 psychologists from the County Argeș Center of Resources and Educational Assistance

- 1 social assistant from the Argeș General Department for Social Assistance and Child Protection

- 1 doctor from the Arges Public Health Department

- *Objectives pursued in performing the focus group:*

- Identification of perceptions, representations, motivations, attitudes of experts with a rich experience in parental education and in social and medical services offered to family;

- Identification of the specific framework for the research and analysis of family from a double perspective: social-educational and psychological.

3. Results, findings

The teachers, the form teachers participating in the focus group highlighted the main aspects of pupils' educational counseling in problems related to: self-knowledge, self image, adaptation and social integration, school success, development crises, crisis situations, solving and surpassing a conflict, appropriation of efficient learning techniques, career orientation, pupils' knowledge, understanding pupils' problems, support in their development, ensuring the balance between school requirements and pupils' possibilities, in identifying the causes of school non-adaptation, optimization of the school-pupil relation. Also, certain form teachers underlined that, in the opinion of most parents, school is the institution in which they continue to be most trustful for the education of their children. For this reason, as to the support that school grants to family, it was asserted that the services offered by it are rather few and do not fully answer the needs specific to families. Generally, the interaction with parents is limited to parent meetings and consultations, in which mostly information activities dominate, and less support and training activities. As to the collaboration of family with school, the lower and lower interest of parents in communicating with teachers, in participating in parents' meetings etc was underlined. The father's presence as a partner in family-school relationships is very low. Some parents mentioned that they can no longer provide support and control in doing children's homework (mostly, school tasks being

very complicated for them). Other parents claimed that they sanction their child depending on school results.

The recommendations of the participants in the focus group also regard the specific activities related to parents' educational counseling which could form the object of workshops with families for a better knowledge of their children, for a better understanding of their needs and behaviors, for identifying the risk factors in family, school, social integration, for the communication between parents and children on themes related to their daily life (the child's future, friendship, love, sexuality) etc.

Generally, the education of future parents materializes at the school level through homeroom classes and the orientation and counseling activities, where several themes related to family not sufficiently covering the parental education problem are approached (family types, the change of family roles, family care and support etc.). The classes are frequently held by teachers without a special training in this field.

School counselors and psychologists described the specific psychological counseling activities for parents and children and also underlined the complementarity of these interventions with the parental education and educational counseling actions. Some parents benefit from psychological counseling for:

- Surpassing difficult situations (divorce, loss of job, intra-family conflicts, chronic diseases, death of one of the spouses, etc.) endangering child's safety or generating risks related to the child's separation from its family environment;
- Optimization of the communication with the child, making the best decisions, negotiating solutions and creatively solving conflicts between generations;
- Development of parental skills and practices for children's education and care.
- Supporting the children with special educative necessities.

The social assistant stated the situations and the family cases in which interventions are usually made and in which specialized social support is offered, and the doctor insisted on the specific prevention and treatment actions for families. It was underlined that interventions and preventive models eliminate risks and the promotion of interventions develops positive functionality and is focused on the acquirement of competences and capacities.

Therefore, the optics of the interviewed experts led to the adoption of a holistic perspective, of social and systemic approach of proactive practices in the services offered to family and of the socio-educational interventions supporting and strengthening family functioning.

4. Conclusions

As a direction of research and social pedagogic action, family pedagogy dimensions and orients its research area at 2 levels:

L₁: *education of future parents* – as an educative action of preparing the young for the family life, for exercising their role as future parents. *Family education* supposes the special direction of the educational process to preparing the young for exercising their role as future parents. The education process for family life starts with the education *in and through* family. *Family education* regards the actions and the influences within family with an educative nature, which come from parents and are

oriented to shaping the child's personality. *Education through family* depends on the general culture of family and its life manner, both of them providing permanent feedback for the consolidation of family roles.

Four preparatory stages for family life are mainly delineated: the stage of forming the affective image about family life (of the habit to integrate in the parental family life), the stage of value orientations (of adhesion to value and cultural patterns of family and their internalization), the stage of consolidating personal independence and asserting full personality (pre-marital stage), the stage of option for family life, of formation of the new family (the marital stage).

L₂: *parents' education* – as action of modeling parents' personality for optimizing their relations with children. Considering the complexity of the society we live in, family pedagogy may offer consistent solutions of psycho-pedagogical nature for the satisfaction of parents' need of being helped in educating their children as better as possible. *Parents' education* has the purpose of encouraging the conscious and responsible assumption of the parent mandate. Such an intervention has as finality the optimization of the parent-child relationship, which is in a continuous transformation and continuous re-adaptations.

Family pedagogy cultivates the parents' spirit of responsibility for the education of their children. Its intervention is necessary in solving such problems as: the early education of children in the first years of life, the early formation of civilized behavioral habits, the child's preparation for school, the maintenance of a harmonious relationship of family with school, the manner of gaining parental authority, the manner of organizing the child's leisure time, the manner of counteracting the influence of a negative entourage in the child's group of friends, the settlement of intergenerational conflicts, etc. But the priority function of family pedagogy is however the transmission of social and cultural values and norms from one generation to another in view of a successful social integration.

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Annex

Interview Guide

1. How long have you been a form teacher /school counselor /psychologist/doctor/social assistant?
2. How often do you have meetings with parents?
3. In what circumstances do you perform/did you perform educational/psychological/intervention counseling activities *for and in favor of pupils and their parents*? Briefly describe the work with parents!
4. What types of needs did parents express when you had relations with them in different contexts?
5. Do you consider that parental education can contribute to the increase of the quality of the children's education process and their wellbeing? Argue your answer briefly!
6. In your opinion, what types of activities could form the object of a special program of parental education circumscribed to family pedagogy?

CORRELLATION OF MATHEMATICS AND PHYSICAL EDUCATION

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Abstract: *The aim of each modern teaching is integrated learning while various knowledge is associated horizontally and vertically. At the Teachers' Training Faculty in Belgrade,*

we have practiced camping of our students at the most remote parts of Serbia where students learn how to survive in nature. They find themselves in various and most incredible situations in which they have to practice mounteneering, swimming, finding food in the surroundings in nature, etc. It has shown that many situations, besides physical fitness and good health, require a solid mathematical knowledge. We are trying to present elementally mathematical knowledge indispensable for survival outdoors, in nature, in this work. These knowledge enable us to orientate without a compass, determine the height of an object, the width of a river, the distance of heavenly bodies, etc. Having in mind the fact that future teachers are on camping, we also point to the aesthetic side of upbringing and education.

We admire mathematical organization of nature in various situations. We point to mathematics present at a leaf of a tree, honeycomb of bees, animals' growth, etc.

Key words: *mathematics, physical education, camping, resourcefulness /surviving outdoors.*

Introduction

The aim and tasks of physical education teaching are not realized exclusively during instruction (by regular time-table for physical education and anticipated physical activities that last 45 minutes in essence), but also through extracurricular activities which are especially important for the students.

If we start from an assumption that one of the basic tasks of physical education is to teach an individual to practice permanently and in free time, on the basis of personal determination and conviction, then it is clear that this task is easier done through the forms of work in physical education for which the students were determined voluntarily. The subject matters which cannot be realized through a class lasting 45 minutes are important for physical education instruction as well.

"The essence of extra curricular activities is the same as at teaching physical education. Doing the tasks and reaching the aim of physical education by practicing bodily movements – exercises". (Martinovic, 2005:466)

Going outdoors becomes a practice to many people after one going out for a breath of air only, in green forests and fields or along a river. The very staying out in

nature can be realized in many ways, and one of them is camping , organized by the Teacher Training Faculty in Belgrade for its students, within elective subject ' Outdoor activities'. The aim of outdoor activities is to introduce better the students – future teachers and tutors into the possibilities and contents which could be offered by organised staying outdoors, in nature, with basic aim to pass on gained practice and experience to youth they will work with in near future during their professional work.

Camping , as a specific form of holiday and recreation in our conditions, has occurred recently. It has especially become popular when so called selective tourism occurred , when one is in the position to choose the mode and place of one's staying , when the need to explain the forms of staying in nature in more detailed way occurred , and especially camping.

In order to do the tasks we are facing successfully, while at camping, elemental mathematical knowledge is indispensable as well . A simple mathematical device will enable us to admire the natural order , as David a psalmist did in the 19th psalm, saying : ‘ The Heavens speak glory of God and heavenly sphere is his hands’ work.’ Knowing what kind of mathematics is hidden in a leaf ‘s or a plant’s growth... students will like and understand the nature, where a pedagogical aspect of camping is certain. A simple mathematical device, adopted by students at mathematics lessons , is necessary for orientation and surmounting obstacles in nature. Only with elemental mathematical knowledge, along with physical and health preparation , it is possible to surpass all the obstacles we are facing at the camping successfully.

The task of our work has been to point to necessary functionality of acquired knowledge before and during the studies and their inevitable correlation. The stress is laid on knowledge of mathematics and physical culture.

Mathematical order in nature

While being in nature, we observe it as artists and scientists. We find regular geometrical figures in it, what will increase our attention and more profound experience in everything that surrounds us. If we observe leaves, trees and fruits, we come across the most various polygons (triangles, quadrangles, pentagons, etc.) Thus, for example, we find regular triangle in the cross-section of a Colchicum fruit. A circle could be found in the cross- sections of tree trunks, leaves , at throwing pebbles in the water ,etc. Speaking about polygons and noticing them in nature, we can remind of historical tasks on construction, for example, pentagon, quadrature of the circle, etc. We give our camping a wider, cultural dimension in this way. We find algebraic and transcendental curves in the nature. We should mention spirals that we meet on snails’ shells , sunflower, etc. If we observed a snowflake by microscope , we could notice wonderful six-pointed stars with the most various forms of points, and at the same time, almost no identical forms . Their beauty and regularity cannot be imagined even by the wildest imagination. A pentagon is found in arrangement of seeds in apples and pears, when we cut them in halves. The situation is similar with their flowers. All these facts were mentioned best by Galileo Galilei (1564-1642) , as he used to say:” Nature is a vast book in which the science is written up. It is always open in front of our eyes, but a man cannot understand it unless he previously learns the language

and letters it is written by. It is written by the language of mathematics, and its letters are triangles, circles and other mathematical figures”.

Every object in nature has its form, position toward other objects, and it takes up a part of the space. If we abstract these three features, we come to an ideal geometrical body. We shall notice its surfaces which could be flat and crooked, lines (straight, curved, closed, open), segments of a line, points,... Camping is the right place to return back to Old Egypt and imagine the origins of creating geometry from the nature. After the flood by the Nile , the Egyptians had to measure the ground that was in the shapes of various geometrical figures. In this way they came to the notion of a geometrical figure and its surface. The knowledge acquired in such a way was called geometry. The word geometry means measuring of the ground (from Greek word γεωμετρία).

While objects in nature are regular and irregular, symmetry accompanies almost all living creatures. If we observe arrangement of leaves on a stalk, we will find many facts interesting for mathematics. The leaves at some plants are arranged in circles at the stalk's joints, and the leaves along the stalk are arranged in spirals and symmetrically at some other plants. The Pythagoras's triangle (length of the sides 3,4,5) is found on a dry leaf of globeflower and Japanese cypress (Doci,2005:17). Not to mention the spirals and golden cross-sections of shells, fish and crabs . We find here golden rectangles and squares. Fish also contain golden cross - section and the Pythagoras's numbers in the most varied ways. (Doci, 2005:68-69). A serious mathematical discussion about arrangement of leaves on a stem leads us to a golden cross-section, numerical progressions , chain fractions, and much more of it because we need to know advanced mathematics. However, we are on camping, and we should always develop love and admiration toward natural phenomena , thus it is sufficient to deal with these phenomena just superficially as well. Golden cross-section (Divine proportion) is the greatest harmony which is seen everywhere in natural conformity. All that is divided by golden cross-section is beautiful as it is adopted to the features of our eyes. If we divide a whole into two parts in such a way that a greater part refers to a smaller one as the whole to a greater one, then we get golden cross-section. Many flowers have the shape of a five-pointed star (a regular pentagon) in nature. For example, it is a case with azalea , bellflowers and dog rose flowers. Ratio between the distance of two opposite and two adjacent tops on a flower equals a golden proportion. More elaborate mathematical device, which is omitted here, can show that arrangement of leaves on a stem contains within itself Fibonacci's (Fibonacci, 1180-1250?) progression (1,1,2,3,5,8,13,21,24,..., each member equals the sum of the previous two), golden cross-section and many more mathematical laws (Sevdić, 1965:27-36; Čanak, 2009:118-119). Golden cross-section is also found in a field chamomile flower pattern. Sunflower seeds are arranged along logarithmic identical angle spirals that move in opposite directions. We find Fibonacci's progression and golden cross-section in the number of seeds per spirals and ratio of number of seeds in one and the other direction of spirals. Number of spirals at most of average size sunflowers is 34 and 55. These are Fibonacci's numbers (f9, f10). At large flowers, that number is 55 and 89, also Fibonacci's numbers (f10, f11).

We also come across hives and bees in nature. It is the opportunity to say something about hexagonal cells of honeycomb where a bee moves. From the initial position, a bee comes across to the next adjacent cell, moving always to the right (up-straight-left). Number of paths, from the initial point to certain point n equals $n+2^{\text{nd}}$ term of Fibonacci's progression. A bee builds its honeycomb in such a way that it can store maximal quantity of honey in minimal space with the least consumption of wax for the construction.

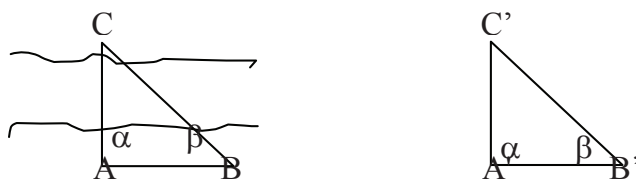
Mathematical device helps in overcoming obstacles in nature

While at camping, we organize going to mountaineering, we explore the surroundings and overcome unknown obstacles. It is especially important to know how to measure the height of the rock that interposes and blocks the road, the width of the river that we should swim across, the length of the road, etc. Elemental mathematics helps us here, knowledge of lengths of some parts of our body, a rod, shadow, etc. We will remember an anecdote how Tales (624-547 B.C.) measure the pyramid of Kheops. He was asked by the Egyptian priest to measure the height of the great pyramid, Tales took the advantage of a clear day, laid in the sand and left the impression/trail of his body, stepped on one end of the impression and waited till the length of the shadow coincided to the length of the trail, i.e. impression of his body in the sand. At that moment the height of the pyramid was equal to its shadow. But, Tales did not have to wait for the length of the shadow to coincide with its original. He was able to count the ratio between instantaneous length of the shadow and the length of the original. The Tales theorem application is even more sophisticated through proportion (Sevdic, 1965:41). Of course, there are entirely elemental mathematical devices to measure a height of, let's say, a tree if the foothill is not accessible.

We come to a river and we want to swim across it. By simple technique, almost without mathematics, we measure the width of the river. We put our hand above the eyes, as when we protect from the Sun, in such a way that we see the spot to which we measure the width of the river by our eyes below the hand. Now we have a rectangular triangle, one leg is the distance from the ground to our eyes, the other is the required distance. Without moving the position of our hand, we turn left, right or towards the land, to the position more convenient for measuring. We notice the farthest spot that we see below the edge line of the hand. We measure the distance till that spot and that will be the width of the river. Although it seems there is no mathematics in it, it is present, however. It is an opportunity for the students to remind of the knowledge about congruence of triangles. There are some other, simple ways of measuring the width of the river, while the proportions and Tales's theorem, and sometimes elemental knowledge of trigonometry. By these simple devices it could be determined:

1. The distance between point A and C which are divided by the river, and point C is visible.

We shall determine an arbitrary point B and measure the length AB, as well as the angles α and β . We construct the triangle A'B'C' on the river bank. Now the distance A'C' will present the width of the river AC.



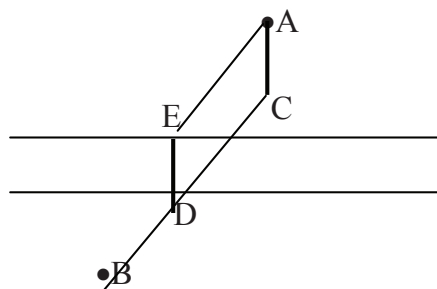
2. The distance of the point A from the point B, if the length AB cannot be measured directly.
3. The distance of the point A from the point B, if some obstacle lies or is located between them, a swamp, for example.

There are many more situations in nature which can be overcome by mathematical device, but we do not quote them in this work.

When we are at camping, we install tents. It is an opportunity to occupy with and amuse ourselves with their mathematical features. Except simple problems, such as calculation the surface and volume, there are interesting problems about tents in the field of minimum and maximum. If the students carry one tent flank each, several of them join and make the tent and stay in it. With the help of mathematics, we will get the answer to the question: Is there, perhaps, the greatest value for the tent's ground size and some greatest value for the value of volume dimension? Maximal values can be searched at arbitrary combination of wings, shape and size of the tent.

We also cross the bridge on the river, and it is an opportunity to think about it. There are two places A and B on different banks of the river. The question is: where exactly to build a bridge so it will end vertically (at a right angle) to the river banks, and places A and B would be connected in the shortest way?

The solution can be seen in the picture. From the point A we draw a segment of the line AC, vertically to the course of the river. The line AC is as wide as the river. The bridge should be constructed at the point D, i.e. where a segment of the line BD cuts the river bank. It is easily shown that every other way from A to B is longer than this one.



Wider knowledge includes geography as well. Knowing how to read a geographical map is of great importance for orientation. For reading maps and determining position, direction and course of movement, it is indispensable to know mathematics, as well as usage of mathematical equipment for reading. Students also

should be instructed how to orientate through reference gadgets such as a watch, rings on a tree, position of the stars, moss on the trees, position of temples and monuments on cemeteries ,etc.

As a meter is not always at hand, we should know measures of our body. Firstly, everyone should know the length of one's step. If one does not know that, one could use the rule that the length of a grown up man's step is equalled by half the distance between his eyes and feet. Another rule, which can easily be proved mathematically, says: A man walks as many kilometers per hour as he makes steps in three seconds. It is useful to know the following rules as well: a meter is approximately equal to the distance between the end of one aside fully spread arm and the opposite shoulder. One meter also equals approximately the distance of 6 spans (nine inches) between the tips of the thumb and index finger spread as much as possible. For other referent measures, ask for Dejić, 1995:156.

While taking a rest

After a busy day, in the evening, by a bonfire, we can turn back to mathematics again, without being conscious of that. In starred nights, it is always interesting to wander off to the classical period when there were no modern observatories, airplanes and satellites, but the wise scientists measured the distances between the Sun, the Moon and other celestial bodies from the Earth by simple mathematical devices. Perhaps the story about Eratosthenes (275-19B.C.) who measured the length, of the Earth's equator, without going around the Earth, as a matter of fact, without going anywhere from Alexandria where he lived (Dejić M., Dejić B.,1995:156).

Number is a quantity of something, and we should always give the answer to the question "How much /how many?" when we are camping. At leisure time, students play chess. It is a good opportunity to find the right answer to the question how many kernels of wheat could be placed on a chessboard, if we put one kernel on the first square on the chessboard, 2 kernels on the second, 4 on the third and so on, on each new square we should put double quantity of wheat that on the previous one. The numbers of wheat kernels on chessboard squares make geometric progression, and their sum is of 20 ciphers.

Someone picked up a dandelion and blew into it. If that dandelion had 100 seeds, and a new plant would grow out of each one, in the second year there would already be 100 new dandelions, in the third: $100 \cdot 100 = 10000 \dots$ in the tenth year there would be 10^{18} . Further, we can count how many dandelions there would be on each square meter on the globe, and where other plants would be placed. The number of insects, animals, mammals, etc. can be counted in the similar way. As a matter of fact, great numbers are all around us. Just have a look at the stars in the sky, numbers on tree leaves, distances to celestial bodies ,etc.

Even while we open a can of cylindrical shape, we can discuss about the problem, how to make a can of circumference given in advance with the least consumption of sheet metal.

Conclusion

Modern men live in cramped quarters surrounded by technique, therefore look ever more for free space in nature and outdoors with as favourable micro climate as possible, what is enabled, in addition to everything else, by taking into consideration and application of physical culture. Physical culture brings a man closer to nature, what is very important. Getting closer to nature should be also understood as approaching of one to oneself and to generic essence contained in its own motion. It must not be forgotten that a man is not a master of the nature, but its product and integral part. Modern living conditions, rational life and running after money, for greater production and rational life determine to a great extent the possibilities of being occupied with physical culture (temporal above all). Practicing physical culture is also, in addition to everything else, a matter of free time, determined for doing cultural activities.

“ A man has a special place in the world of nature. He has made ‘helping devices’, used them as his lengthened extremities, in the sense of prolonged brain activity. A man succeeded in adapting nature to his own needs to a great extent, by his work and activities, and he also does that presently in a modern way. Moving his own body is a primary device which a man uses in order to express relation of his own being and the world he lives in (Martinović, 2005:30).

Presently, integrated learning and application of knowledge are factors that cannot be avoided in any single segment on any level of education. We have integrated two seemingly disparate fields, mathematics and physical education. We demonstrated multilateral advantage of mathematical device and its concrete application at the students’ camping. The students have practically seen and learned how to orientate without a compass, how to determine the height of an object, the width of a river, the distance of celestial bodies, etc. Admiration to mathematical order in nature and application of mathematics at leisure time have not been omitted either.

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THE SELF-IMAGE, ELEMENT OF BEHAVIOURAL AND EMOTIONAL SELF-REGULATION

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Abstract: *During school life, self-image suffers a series of changes due to the increase in age and also experience accumulation, reflecting an individual seal which will not change throughout life. During this period, the individual identifies himself not only with grades that objectify school performance, but also according to the “academic opinion” composed of himself and which he is aware of, in whole or in part. But, as general objective, in this study aims at identifying particularities of self-image and its development in 4th grade students. At the same time, in order to improve students’ self image, their self-control capacity, the reduction of the fear of failure, it is essential to implement strategies regarding a stimulative learning environment, involving all students, feedback on the performance level, recognition of the students’ merits.*

Key words: *self-image, self-knowledge, self-esteem*

I. Concept delimitations

The self-image refers to the place or value an individual attributes to himself in relation to the other members of the community to which he belongs, under the circumstances of an accurate self-knowledge. Self-knowledge is self-knowledge of the person, meaning perception and knowledge from her own activity, from her own behavioural actions, from her relations with others, from successes and failures, from her aspirations compared to those of others, in relation to which the person obtains the awareness of its own value.

In the Dictionary of Psychology (Doron, R., Parot, F., 2007:387) it is shown that “self-image refers to the representation and evaluation the individual makes of himself in various stages of his development and in different situations he finds himself into. As a result, there is not only one self-image, but several. Psychologists and psychoanalysts who have studied the child showed how these representations are constructed through a game of identification with characters from the subject’s entourage or with real or imaginary figures of heroes. Self-images also depend on how the subject is viewed and appreciated by others”.

Trif, L., taking into account Miclea, M. and Lemeni, G., indicates that self-knowledge / self-esteem refers to the process of exploration and structuring of their own characteristics (e.g. skills, emotions, motivations, attitudes, beliefs, mechanisms of defence and adaptation, etc.) which results in the self-image of the person. Self-image

is the essential marker of behavioural and emotional self-regulation. (Trif, L., 2008:117)

The self-image is linked to the genesis of self awareness. In the psychology of development, the study of the genesis of conscience is part of the study of descriptive, self-descriptive or reflective use of language, together with the study of individuation and self-knowledge processes, addressed by social interactions or by the child's reactions to his own image perceived in the mirror, studied by R. Zazzo.

Closely related to the self-image is self-esteem, which is a fundamental dimension to any human being, whether child, adult or elderly, regardless of culture, personality, interests, social status, abilities. Self-esteem refers to how we evaluate ourselves, how good we consider ourselves compared to our expectations or to others. Self-esteem is the evaluative and affective dimension of self-image.

The great dictionary of psychology (2006:1126) states that “we have three sentences: 1. of all the people an individual knows, the most information he has is about himself, 2. the self is the pivot of any social relationship, 3. the concept of self is determined by the concept of person in the culture the person belongs to”.

The concept a person has of self has many sides. There is the objective side, which we call self-image: the evaluative side, called self-esteem; the side that describes how you want to be, which we call the ideal self; the side related to skills and abilities, called awareness of your own efficiency; the side related to the way you identify with social groups, called social identification and the way in which the sense of self was shaped by the cultural context in which you grew up. (Hayes, N., Orrell, S., 2003:213).

II. Self-image formation

Self-image formation is primarily a subjective construction and involves three aspects: the importance of others' opinion in its construction; the elements on which the perception of others is achieved; the extent to which conduct and motivation influence self-image creation.

The formation of self-image goes through the following steps:

- *the construction of self*, of the subjective self image, what we believe is characteristic for us. At this stage the own assessment of self-image takes place (we like / do not like what we believe about ourselves, what we are). It depends on the individual's personality;

- *awareness of others' judgments* which may or may not coincide with the image built by ourselves. These judgments may also influence self-image;

- *reporting own image to the others' judgment*. This appreciation can lead to positive or negative feelings of satisfaction or dissatisfaction. We are influenced by groups in which we live: primary groups (family, classmates, friends) or secondary (pupils from the same school). The two types of groups affect self-image formation differently. They contribute to the socialization of the individual (G.Kelemen, 2011). An important role in the formation of self-image is played by social comparison. (The theory of social comparison: we compare ourselves with people who resemble us.)

In each of us reside more characters (M. Roco, 2007:26), among which we mention the following: the fundamental character (what we mainly are, the personality essence) the admitted character (what we imagine to be), the dreamed character (what we want to be), the purpose or the model character (what we would like to be, as a model), the exemplary character (what the others or society would like us to be), the reflected character (the way others see us), the apparent character (the way we would like others to perceive us), the secret character (what we hide from the others), the actor character (what we would like to seem in a given situation), the defence character (the character that we take refuge in case of threats)

III. The main issues related to self-image development in young students

During school life, self-image suffers a series of changes due to the increase in age and also experience accumulation, reflecting an individual seal which will not change throughout life. During this period, the individual identifies himself not only with grades that objectify school performance, but also according to the “academic opinion” composed of himself and which he is aware of, in whole or in part. An important feature of this age period is the massive overvaluation of their own possibilities of action, leading first to a certain distancing from the objectified performances (they are not accepted as a true measure of their possibilities), and on the other hand, to the location in the future of “real” confirmations. Promises made to oneself are fulfilled or not during life.

The system of beliefs begins in childhood, with “reproaches” from parents. These reproaches are the first indicators of personal value. As the child grows and develops, he is brought before other mirrors by family members, colleagues and teachers. These reflections of his image form the basis of self image as he matures.

Normally, school and social performance of each student can not all be located at a higher level, especially when school tasks are at a high level of difficulty. Therefore, teachers should create situations where students get to know not only their limits, but also their resources.

IV. Ascertaining study

As **general objective**, this study aims at identifying particularities of self-image and its development in 4th grade students:

In this sense, the **operational objectives** pursued are: identifying self-esteem; self-esteem capacity building; increasing personal assertiveness; developing realistic beliefs about themselves;

Students samples:

We note that there were a number of tools used to select the three subjects, such as: psycho-pedagogical characterization sheet, case study, history, family situation, relationships with others, with parents, siblings, with classmates, the individual sociogram of choices and rejections, relationships with teachers, relationships with friends and relationships with strangers.

A critical role was played by the class teacher who has important information needed in selecting cases. In the following, we shall present the samples of subjects only as identification data in the form of initials, along with their age and gender.

| | | |
|------------------------|------------------------|------------------------|
| 1) Name: D. P. L. | 2) Name: N. A. E. | 2) Name: S. S. L. |
| Age: 10 | Age: 10 | Age: 10 |
| Grade: 4 th | Grade: 4 th | Grade: 4 th |
| Gender: male | Gender: female | Gender: male |

Research instruments used:

a) The LAW S.E.Q. Questionnaire. It is an educational questionnaire that measures the self-esteem of the student. It is not represented as a diagnostic tool, but rather integrated into the screening tests. It is a short questionnaire which includes 16 questions out of which 4 are neutral. The LAW S.E.Q. questionnaire is present in two forms: one for primary and one for secondary school level and it is composed of questions with three possible answers (yes, no, do not know).

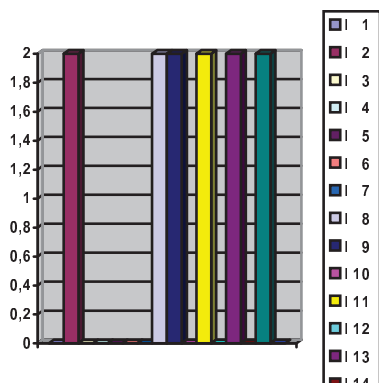
b) The questionnaire for the self-assessment of self-image (Carl Rogers)

The questionnaire provides a list of 32 adjectives, representing both positive personal characteristics (e.g. *humorous, enthusiastic, trustworthy, polite, sincere, strong*, etc.) and negative (e.g. *emotional, fragile, internalized, cynical, jealous, impulsive*, etc.). The subjects have to read the list carefully and put in the column *How I am now*, an "X" next to each adjective, which they consider as being characteristic for them. Then, without looking at the signs put in the first column, they have to reread the list of adjectives and write a "0" in the column *How I would like to be* next to each adjective they would like to be characterised by. **The** terms passed through the grid of adjectives designate values that we submit to the subjects' appreciation. They express the affection-evaluative resonance the words or terms included in the test items have on them. On this basis we can identify individual and group values accepted and shared.

c) The social desirability scale (Douglas P. Crowne and David Marlowe, adapted and experimented in our country by I. Dafinoiu). This scale measures the degree of sincerity and realism of the subjects regarding the assessment of oneself (self-assessment). The scale comprises 33 statements representing attitudes and personality traits. Subjects must respond to each one of them by "true" or "false" as they correspond or not to their own way of being. The answers are related to the standard.

Analysis and interpretation of results:

1) D. P. L. - LAW SEQ questionnaire - 12 points → low self-esteem;



Following the responses listed with 0 points I1, I3, I4, I5, I6, I7, I10, I12, I14, I16, we find discrepancies between desires / aspirations and reality, but reasonable inconsistencies within normal ranges. The student's agreement with himself can improve if he agrees to assume certain responsibilities, facing the difficulties which might arise in their achievement. The absence of the mother in the child's life leads to uncertainty.

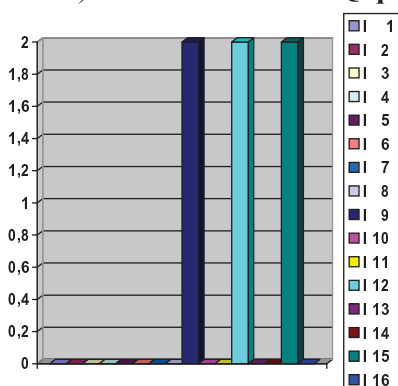
Fig. 1. Graphic description of the results to the LAW SEQ questionnaire

- **Self-assessment questionnaire** → 22 points. It confirms the discrepancies between the current and the ideal Self. "At present" – he attributes himself negative characteristics: emotional, reserved, jealous, stubborn, impulsive, apathetic. As ideal person he mentions positive characteristics: independent, interesting, relaxed, energetic, but also negative: lazy.

- **Social desirability scale** – he obtained a score of 20 points. It is considered high scoring between 20 and 33 points. People in this category are concerned with being perceived as socially desirable. They feel the need to have the approval of others for what they do. A high level of need for social approval is often characteristic of people living a sense of social insecurity, of anxiety, which may affect negatively their interaction with others. Such people are ruled by the desire to do what others expect from them, to behave according to certain social norms, which often causes these people to appear differently from what they are.

The desire to achieve the social desirability ideal generates in people in this situation, energy consumption and sometimes dissatisfaction due to unfulfilment of this goal. This energy could be channelled towards regaining self-confidence or performing a correct reassessment.

2) N. A. E. - **LAW SEQ questionnaire** - 6 points → very low self-esteem;



Analyzing responses to I2, I14, it is inferred that the need for action for the student to overcome the uncomfortable feeling related to the dissolution of friendship, especially since through I10 she affirms her desire for change. It requires the activity to be channelled towards regaining self-confidence, towards a fair review of self.

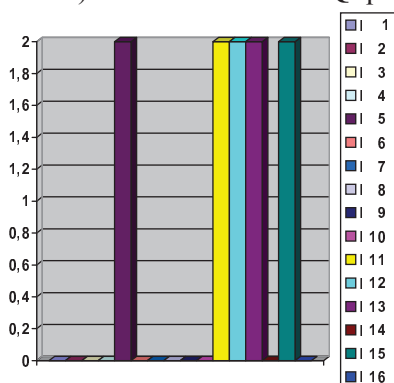
Fig. 2. Graphic description of the results to the LAW SEQ questionnaire

- **Self-assessment questionnaire** → 24 points - suggests a reasonable level of psychological comfort and an insignificant discrepancy between the current

Self and the ideal Self. As ideal person she appreciates the adjective *intelligent* which she does not mark in the “self portrait”.

- **Social desirability scale** – she obtained a score of 15 points. People in the category 9-19 points are characterized by behaviour that shows a relative balance between social desirability and social undesirability. They want to present themselves as being as close as possible to everyday normality.

3) S. S. L. - **LAW SEQ** questionnaire - 10 points → very low self-esteem;



The answer to I16, by which he accepts that other people believe he is telling lies, reveals that he is concerned by the assessments of others. Negative relations with others are expressed by the appreciation that others often break friendship with him and he must find new friends, for the old ones play with someone else (I3, I14). It is necessary to help the student recognize representative personal qualities and negative traits he wants to change in himself.

Fig. 3. Graphic description of the results to the LAW SEQ questionnaire

- **Self-assessment questionnaire** → 32 points - suggests a reasonable level of psychological comfort and an insignificant discrepancy between the “self portrait” and ideal Self. The same adjectives he attributes himself at present are also marked in the box *if he could be an ideal person*, including negative features: emotional, lazy.

- **Social desirability scale** – with a score of 22 points, he is characterised by a high degree of social desirability (social conformity). He is expected to change attitudes and behaviours easier, as required by specific circumstances of life, to get social approval of his acts.

V. Conclusions

The formation of a balanced self-image, of dignity and self-esteem and respect towards the others is done by becoming aware of resources and limitations, different from student to student. Thus we come to the acceptance of natural differences between people, to an increase in tolerance and to the avoidance of global labelling which can have negative effects on their personality.

At the same time, in order to improve students’ self image, their self-control capacity, the reduction of the fear of failure, it is essential to implement strategies regarding a stimulative learning environment, involving all students, feedback on the performance level, recognition of the students’ merits. Therefore, the attention that the teacher must pay to developing a positive self-image represents an important contribution to school success at this stage and the preparation for subsequent cycles.

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USING THE FOUR RESOURCE MODEL TO MAP OUT PLANS FOR A LITERACY LESSON

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Abstract: *The purpose of this paper is to map out plans for a literacy lesson using the framework articulated by Freebody and Luke (1999a) in the four resources model. The reason why I have chosen to write about the practicalities of the four resources model lies in the fact that literacy is an important contemporary topic, especially in the context of middle school students. Rush (2004) noticed that research mainly focuses on reading intervention in the early years of schooling, while middle school students are a neglected target group. This paper aims to curb this situation. At the same time, the present paper aims to put into practice Freebody and Luke's four resources model, thus creating a much needed precedent in middle school literacy education.*

The paper is structured into three parts. The first part deals with a literature review of the four resources model with the focus on the four main roles (i.e., code breaker, meaning maker, text user, and text analysis). The second part of the paper presents the literacy lesson under analysis and the educational standards that have to be met according to the school curriculum. The third part maps out plans for the chosen lesson, giving examples of activities for each of the four main roles in Freebody and Luke's four resources model. The paper ends with a conclusion, followed by a relevant list of references.

Key words: *curriculum, Freebody and Luke, four resource model, literacy, lesson, standards*

Literature review

The definition of literacy in the twenty-first century as stated in *Literate Futures: Report of the literacy review for Queensland state schools* is a broad one: "Literacy is the flexible and sustainable mastery of a repertoire of practices with texts of traditional and new communication technologies via spoken language, print and multi media" (Luke, Freebody and Land, 2000, p.9). At the same time, Freebody and Luke (1999b) argue that literacy education does not mean developing certain skills but, as suggested in the definition above, it refers to developing social, cultural, and economic practices.

According to the four resources model framework, the repertoire of literacy practices has been separated by Freebody and Luke (1999a) into four main roles. Luke and Freebody decided to conceptualise literacy in this way because they realised that everyone – regardless of their view of literacy – was (practically) right. The four

resources model focuses on the range of practices which, if emphasized in a reading program, will be able to cover and integrate a repertoire of textual practices needed in today's new economies and cultures (Freebody and Luke, 1999a). *Literate Futures* also acknowledges the fact that effective progress in schoolwork was highly influenced by the acquisition of reading (Luke, Freebody and Land, 2000).

The four resources model does not discard the current and well-developed techniques used by teachers worldwide to train their students in becoming literate, but rather attempts to recognize and incorporate them. As such, the model became a map of possible practices dependent on the teacher's reading of his or her students' existing linguistic, cultural, and textual practices (Freebody and Luke, 1999a). The four resources model is a framework that "avoids a model of literacy as the artifact of pedagogical styles or preferences; rather it draws attention to the kinds of practices students need to learn" (Comber, 1997, p. 32).

The creators of the four resources model did not have the intention of transforming their model into a solution to all literacy problems, but rather, Freebody and Luke offered an alternative way to teaching the skill of reading and a way of conceptualising what (effective) readers do. This is also evident from their decision to change the terminology used since the model's initial development, preferring to use the notion "practices" instead of "roles." The word "practices" even suggests that the models are applied in everyday classroom or community contexts. On the contrary, the term "role" suggested a pre-established framework that students need to fit into (Freebody and Luke, 1999a).

According to Freebody and Luke (1999a), literacy has **three dimensions**: breadth, depth, and extent. The breadth of an individual's or community's repertoire of literate practices refers to the range of social activities offered by the curriculum. These literacy activities are also referred to by different researchers as "genres" or "text types." The concept of extent refers to the range of novelty, transformation, and redesign at work.

Both the breadth and depth of literacy practices can be assessed because they are developed through educational experiences (Freebody and Luke, 1999b). The depth of skills exercised by a student draws on a repertoire of literacy practices that allows the learner to successfully engage in reading and writing activities. Of course, literacy can also include listening and speaking, as well as multimedia texts. The four practices advocated by Freebody and Luke's model are: (1) breaking the code of texts, (2) participating in the meanings of text, (3) using texts functionally, and (4) critically analysing and transforming texts (Freebody and Luke, 1999a).

The reader as a **code breaker** refers to the ability of a person to successfully recognize and engage the technology of written texts (Freebody, 1992), with an emphasis on decoding and encoding the symbols of written, spoken, and visual texts. This includes the alphabet, sounds in words, whole words, letter/sound relationship; spelling; grammar, vocabulary, punctuation, intonation, rhythm; clauses, sentences, and text structure; and visual, nonverbal, and auditory codes (Ludwig, 2003).

The reader as a **meaning maker** or **text participant** entails engaging the technology of the text itself (Freebody, 1992) by comprehending and making meaning

from written and spoken texts. This includes using background knowledge to construct meaning; comparing personal experiences with the ones presented in texts; relating previous experiences with similar texts; seeing own interests and lifestyles reflected in texts; interpreting words, clauses, sentences, and texts; interpreting visual, nonverbal, and auditory texts; and looking at the way texts are constructed to make a specific meaning (Ludwig, 2003).

The reader as a **text user** means being able to take part in social activities in which the written text plays a major part (Freebody, 1992), with an emphasis on knowing how to use texts – appropriate audience and purpose, the right type of text for the right context and purpose. This includes understanding cultural and social contexts which dictate the way texts are structured; using appropriate text types for specific purposes; recognising the particular structures and features of texts; and understanding the options for using certain texts to convey particular meanings (Ludwig, 2003).

The reader as a **text critic** or **text analyst** refers to the understanding that written, spoken, and visual texts are not neutral, no matter how factual or neutral the texts seem to appear (Freebody, 1992). Most texts rather advocate particular points of view while silencing others. This includes recognising the purpose in creating the text; recognising that texts influence people; recognising opinions, bias, points of view, and missing points of view in the text; understanding that texts are written according to the views and interests of the author; identifying the ways in which the readers, viewers, or listeners are influenced; and presenting alternative points of view (Ludwig, 2003).

Freebody and Luke (1999b) argue that the practices presented in the four resources model are necessary, but none of the four areas are sufficient to become effective literate citizens. It is also believed that the four resources model produces different learning effects for different groups of students, depending on the pedagogies and curricula used.

The text under analysis

The four resources model has been used effectively by teachers worldwide in mapping the strengths of students, with a focus on strategies aimed at developing the students' weaknesses (*Further notes on the four resources model: Transcript of one conversation with the authors*, 1999). Teachers also believe that Freebody and Luke's model provides a framework for well rounded instructions in classrooms (Rush, 2004).

The target text that will be incorporated in the four resources framework is entitled "How He Did It: Health Advice, Kid-to-Kid" by Amy Bertrand, part of *Unit 1. Why read?* in *Glencoe Literature. Reading with purpose* by Jeffrey D. Wilhelm et al. (2007). According to the *English-language arts content standards for California public schools, kindergarten through grade twelve*, the standards that apply to this lesson are:

- Under "READING: Word Analysis, Fluency, and Systematic Vocabulary Development," the students should be able to "1.3. Clarify word meanings through the use of definition, example, restatement, or contrast" (California Department of Education, 1998, p.42);

- Under "READING: Reading Comprehension (Focus on Informational Materials)," the students should be able to "2.4. Identify and trace the development of

an author's argument, point of view, or perspective in text” (California Department of Education, 1998, p.43) and “2.6. Assess the adequacy, accuracy, and appropriateness of the author's evidence to support claims and assertions, noting instances of bias and stereotyping” (p.43);

- Under “WRITING: Writing Strategies,” the students should be able to “1.1. Create an organizational structure that balances all aspects of the composition and uses effective transitions between sentences to unify important ideas” (California Department of Education, 1998, p.44);

Mapping out plans

According to Freebody (1992), a successful reader needs to develop and be able to sustain the resources needed to play the four roles of the model: code-breaker (“How do I crack this?”), text-participant (“What does this mean?”), text-user (“What do I do with this, here and now?”), and text-analyst (“What does this do to me?”).

In this section, the four resources model will be used as an instructional framework to map out plans for teaching a reading lesson using *How He Did It: Health Advice, Kid-to-Kid* by Amy Bertrand. Following are examples of how the text under analysis can be used within each of the four areas of the framework will be given. All the activities suggested below have been designed for a class of 12, Grade 7 students, but are easily applicable to other middle school levels. The students are assigned *How He Did It: Health Advice, Kid-to-Kid* (Bertrand, 2007) and divided into four groups of three. One student in each group is chosen to represent the group and to record the group's findings and, later on, share them with the other groups.

The question that each group will have to explore in order to **develop code breaking strategies** is: “Which words do you think are interesting?” (*Learning Role Cards*, 2002). In their groups, the students brainstorm ideas and the group representative writes down the words that appeal to them. Once they have completed this task, the teacher asks the students to give an explanation of what the words mean in their contexts. The representatives take notes once again. While the students are on task, the teacher monitors and gives advice and assistance where needed. After the students have completed the activity, the representatives of each group share their ideas with the other groups. Once back in their original groups, the entire class helps to put up a list of interesting words found in the text under analysis. This list can be used later on by the teacher as the weekly spelling list. This activity meets standard 1.3 under “Word Analysis, Fluency, and Systematic Vocabulary Development” (California Department of Education, 1998).

The question that each group will have to explore in order to **develop meaning making strategies** is: “What are the main ideas presented?” (*Learning Role Cards*, 2002). Each group is given the possibility of choosing one idea that they would like to analyse in terms of the author's argument, point of view, or perspective in text. After the students have completed the task, the representatives of each group present their findings in front of the class. With visual support from the book, the presentations can generate lively discussions in which the teacher can take the role of facilitator and mediator. This activity meets standard 2.4 under “Reading Comprehension (Focus on Informational Materials)” (California Department of Education, 1998).

The question that each group will have to explore in order to **develop text using strategies** is: “If you were to make your own version of a website about the topic under discussion, how would it be different to the print version?” (*Learning Role Cards*, 2002). The students create an organizational structure for their website, balancing all aspects of the composition. In order to unify important ideas, the students are asked to use effective transitions between sentences and prepare the virtual links of each section of their web site. The teacher can collaborate with the Information Technology teacher so that the students brainstorm for ideas in the class, and create their web sites in the computer room. This activity meets standard 1.1 under “WRITING: Writing Strategies” (California Department of Education, 1998).

The four questions that each group will have to explore in order to **develop text analysing strategies** are: “Are there stereotypes in the text? Who does the text favour or represent? Who does the text reject or silence? How does this text claim authority?” (*Learning Role Cards*, 2002). On completion, each group reports back to the class, supporting their answers with examples for the text. This activity meets standard 2.6 under “Reading Comprehension (Focus on Informational Materials)” (California Department of Education, 1998).

Conclusion

This paper has presented the main characteristics of the four resources model, giving detailed explanations of what Freebody and Luke (1999a) understand by code breaker, meaning maker, test user, and text analyst. In order to connect theory to classroom practice, a text had been chosen and activities that match the four resources framework had been presented. The author of this essay believes, just as other researchers have concluded (see Rush, 2004), that the four resources model advocated by Freebody and Luke (1999a) can be used to develop a range of skills and knowledge needed by all literacy learners.

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READING WORKSHOP 1

INFORMATIONAL TEXT
WEB SITE

How He Did It:

Health Advice, Kid-to-Kid

by Amy Bertrand

Sixth-grader's Web site helps other children stay fit. 1



Ever since Robert Kohn can remember, his parents have stressed the importance of healthy eating and exercise.

"I think I've heard about it forever," he says.

That education led to a remarkable project by Robert, a sixth-grader. For a school project, he wrote a research paper on childhood **obesity**, then created an advisory council on it, which in turn led to a Web site, created especially for use by children.

Robert's not known for being big into team sports at school, says his mom, Dee Dee, but he still values the importance of working out. He plays golf and tennis and works out about two days a week in a gym, lifting weights and "focusing on cardio¹ right now," he says.

He's never had a weight problem, but knows kids who have.

"It's a huge problem," he says.

That's why he wanted to **tackle** it for his school project. 2

1. **Cardio** is short for *cardiovascular*, meaning of the heart and blood vessels. Exercise that increases heart rate is often referred to as *cardio*.

Vocabulary

obesity (oh BEE sih tee) *n.* condition of being extremely overweight

Practice the Skills

1 Key Text Element

Text Features Read the subtitle and the deck, which is right below the writer's name. Do they give you information that might help you set a purpose for reading?

2 English Language Coach

Word References What does it mean to **tackle** a problem? Use a dictionary to find the meaning of *tackle* that is used here.

20 UNIT 1 Why Read?

Bertrand, A. (2007). *How He Did It: Health Advice, Kid-to-Kid*. In Wilhelm, J.D., et al., *Glencoe Literature. Reading with Purpose*. Columbus: Glencoe/McGraw-Hill.

The project:

In his language arts class, students were required to come up with a topic that would be used in a three-pronged,² yearlong project. The first part of the project was to write a research paper; the second part was to come up with an action plan; and the third portion was to get someone to take action.

Robert began by reading books and searching the Web. He found quite a bit of information on the topic, but not much of it was directed at children.

So, he put together an advisory council on the subject, which included teachers, a dietitian,³ a hospital administrator and a chef. They met a couple of times and helped Robert cultivate information⁴ for his next big project: creating a Web site just for kids. **3**

The Web site:

What resulted was www.healthychoicesforkids.com.

Robert gathered all of the information he wanted to include, then sketched out what he wanted each page of the Web site to look like, along with the words to go on it. A professional designed the Web site for him, and the result is a kid-friendly site with kid-friendly graphics. It's easy to navigate and written in a language kids can easily understand.

2. **Three-pronged** means that the project has three parts.

3. A **dietitian** is an expert in planning meals or diets.

4. When someone **cultivates information**, he or she prepares and organizes it in a way that is clear and easy to follow.

Vocabulary

advisory (ad VY zuh ree) *adj.* having the power to give advice

administrator (ad MIN uh stray tur) *n.* person who manages or directs



READING WORKSHOP 1

Analyzing the Photo Do you think that this would be a good picture to appear on Robert's Web site? Why or why not?

Practice the Skills

3 Key Reading Skill

Setting a Purpose for Reading Has your purpose for reading changed now that you've started to read the article? Think about your original purpose, and then think of a second purpose for reading.

How He Did It 21

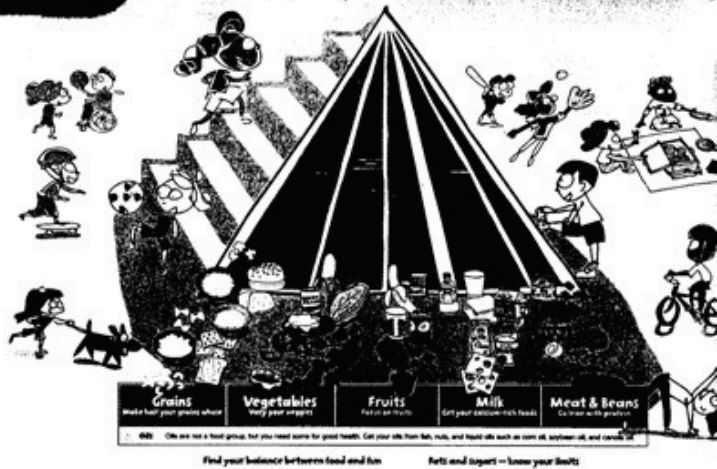
Bertrand, A. (2007). How He Did It: Health Advice, Kid-to-Kid. In Wilhelm, J.D., et al., *Glencoe Literature. Reading with Purpose*. Columbus: Glencoe/McGraw-Hill.

READING WORKSHOP 1

Topics on the site include:

- How do I know if I'm overweight?
- What are the risks of being overweight?
- Portion sizes.
- Making healthy choices while dining out.
- How many calories do I burn during common activities?

"I'm hoping other kids get educated about obesity: What it is, the risks of being obese, how to get in better shape," Robert says. 4



Analyzing the Graphic According to this food pyramid, what is one food you should eat more of for better health?

The action plan:

Robert's strong views on the subject took him to his next step: writing lawmakers.

"In my research I found HB 81,⁵ a bill about having exercise and healthy foods at public schools," Robert says.

So he wrote the supporters of that bill, and though he's still waiting for confirmation, he's been asked to speak about his findings.

"I think I'll tell them why I think childhood obesity is such a huge problem, how horrible obesity is and how many people are suffering," he says. "It can cause diseases like cancer, heart disease, high blood pressure."

His **ultimate** goal is to have the lawmakers take over his Web site. "I want to see what they can do." 5 ○

5. **HB 81** means "House Bill 81," a proposed law on which Congress has been asked to vote.

Vocabulary

- calories** (KAL uh reez) *n.* units used to measure the energy supplied by food
- ultimate** (UL tuh mut) *adj.* greatest; most important

Practice the Skills

4 BIG Question

What information could you read on Robert's Web site that might help you or someone you know?

5 BIG Question

Write three things that you learned from reading this article. Write your answer on the "How He Did It" page of Foldable 1. Your response will help you complete the Unit Challenge later.

DIMENSIONS OF COOPERATIVE LEARNING IN EDUCATIONAL CONTEXTS

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Abstract: *The article discusses the possibilities to increase the role of cooperative learning in educational contexts. The theoretical model introduced in the first section is reflecting the social interdependences perspective, and proposes an integration of humanistic and constructivist models. The new reference framework developed is considered a useful starting point for the by introducing some explanatory models regarding knowledge development through interactions within the learning group, through cooperation. Moreover their effects on learning motivation are underlined in the context of specific educational activities.*

Keywords: *intra and interpersonal competences, learning group, cooperative learning*

1. Characteristics of postmodern education

Present-day school is mainly the product of industrial, modern, impersonal society. When relating education to postmodern society several questions arise: Should education reproduce and preserve culture or enrich it, develop the human being's diversity and potential? The answers to these questions can be identified in the analysis of postmodernism's characteristics as found in education:

- Revaluing the subjective dimension of the educational process as a relation where teachers and students are “constructors of meanings and significances”,
- Complexity and ambivalence by turning from a “paradigm of certitude” to a “paradigm of incertitude”, to a subjectivation of learning,
- Openness, diversity and transdisciplinarity,
- Hermeneutic approach as means and reflexive and self-reflexive capacity of the human being, as possibility of constructing one's own vision of the world and decision taking in accordance with phenomenological perspectives,
- Intra and interpersonal communication as means of global intercultural development,
- Facilitating creativity by understanding latent socio-cognitive mechanisms and manifests of developing personalities as axiologization of critical cultural elements,
- Continuous development and lifelong learning,
- Forming competences on the four dimensions of learning: learning to know, learning to do, learning to live among the others and learning to be.

Education can be analysed in a broad manner in an evolutive and comparative way, from the perspective of learning: traditional, modern, postmodern.

Figure 1. Evolutive characteristics of education

| Traditional | Modern | Postmodern |
|-------------------|---|---|
| Thorough learning | Efficient learning, Active learning. | Significant learning, Thorough learning, Transformational learning, Interactive learning |
| Passivity | Action and competitiveness | Cooperation and subjective engagement |
| Acquisitions | Abilities, capacities | Competences |

2. Humanistic paradigm

Some characteristic aspects of postmodern education originate in psychological humanistic theories of learning. These theories have important contributions for the development of intrapersonal competences. In the middle of the 20th century, C. Rogers promotes a new goal of education, which is still up-to-date: learning how to learn, to involve ourselves in the process of change, our society is undergoing. Learning is considered significant if it involves all five elements:

- It has the quality of personal involvement (rationally-cognitively, motivationally, emotionally, attitude-based),
- It is self – initiated (involves the sense of discovery, intention, expansion and understanding),
- It has resistance power (significant for behaviour, attitudes, learner's personality),
- It is assessed by the learner,
- The core of learning is understanding, spread over the experience as a whole.

„Humanistic paradigm is in favour of an open educational system and for a school that favourizes active participation of the educator in creating the message, meaning, value.” (Emil Păun, Dan Potolea, 2002, p.32). This is a non-directive type pedagogy oriented toward facilitating mediated learning based on the following principles:

Human beings have the capacity to learn, having within themselves the curiosity and wish to understand the world, being capable of overcoming the problems arisen by adaptation and especially by learning.

Institutionalized learning is coherent and consistent only when perceived in relating to personal projects. The educator has to help the pupil, to identify and solve problems that arise as significant to him.

Learning perceived as a major need for change in the organization of the self, is seen by pupils as threatening and therefore they tend to fight against it. This perception is the result of the need to change his/her own values.

Knowledge with a threatening character for the pupil is better acquired when threats are reduced to the minimum. Therefore the educational environment has to be comprehensive, familiar and encouraging.

A valid learning is carried out through action, confrontation with problem solving process, through confrontation with social, psychological and philosophical problems as well as personal difficulties.

Learning is facilitated only if the subject is involved and shares responsibility in the learning method, in choosing orientation, self-discovery, decision in how to carry out learning and if s/he is responsible for his/her decisions.

Learning that fully engages the subject has the strongest effects upon his/her personality and it leads to learning by and about him/herself.

Independence, creativity, trust are efficient and act only when self-criticism and self-assessment function as elementary psychical processes involved in learning. Assessment carried out by someone else, even teacher, can have a secondary position because someone who depends only on external evaluation becomes reluctant, unconfident, or remains naïve and immature.

We consider that humanistic education is one of the main ways to cultivate the subject's capacities of communication, of relating to reality in a subjective manner by understanding of the self, of the world and their judgement.

3. Cooperative learning – dimensions and exigency

Social Interdependence paradigm has as representatives K. Kofka, K. Lewin, M. Deutsch, Jhonson&Jhonson, Cohen Sh. Sharan, E. Aronson and others and develops the idea that the type of structural interdependence from a situation determines the way individuals interact among themselves. Social interdependence exists when individuals share mutual goals and the results of each individual are dependent on the others' actions. M. Deutsch identifies three types of interdependence and the ways of interaction that generate them:

- Positive interdependence reflects cooperation actions when individual actions promote the success of the others,
- Negative interdependence which indicates the reverse situation when one's actions block the success of the others,
- No made interdependence by whose means one's activity does not produce effects on the others neither regarding stress nor regarding failure.

The theory of social interdependence generated methodological experiences that tried to promote positive interdependence within the learning group

All these theories generated in the educational practice of the 20th century a ample research and scientific development of cooperative learning. These led to its application is an important way of structuring the formal and nonformal learning situations on different age levels.

Cooperative learning takes place when pupils work together, either in pairs or in small groups to solve one and the same task, to explore a new subject or to create new ideas, new combinations and even authentic innovations.

„Cooperative learning means using as training method of small groups of pupils/students, so as they will be able to work together and eventually each member of the group improves his own performance and contributes to increasing the performances of the other group members.” (Jhonson, R., Jhonson D., Holubec E., 1994, p. 3)

Several steps have been made from learning in groups to cooperative learning and organising the learning experience other than individually.

There are some differences between learning through collaboration and cooperative learning, the most important being that in learning through collaboration the stress is laid on the learning process and in cooperative learning the process and the result are equally important. The orientation towards the product as result of the learning process brings about the development of goal oriented thinking and of the feeling of individual and collective responsibility. „Cooperative learning refers to a set of training strategies that involve cooperative pupil - pupil interaction towards the subject, as integrated part of learning process.”(Kagan, Spencer, 1994, p. 41)

Cooperative learning develops the respect for diversity, the capacity of empathy, social abilities. The social – cognitive conflict arises given the fact that among the group members there are also cognitive differences. This conflict generates the acceleration of learning.

Numerous studies prove the superiority of cooperative didactic strategies in the prejudice of competitive and individual learning. Cooperative didactic strategies develop superior cognitive processes, communication abilities, improve motivation, self esteem, develop the personality.

In the field related literature, cooperative learning is characterised by the following elements: *positive interdependence, direct interaction, individual responsibility, interpersonal and small group abilities, group processing, pupils` roles and abilities necessary for group work*

Positive interdependence

We may say that positive interdependence is done when the members of a team aspire to a certain mutual acknowledgement, being positively dependent on each other. Everything that is a gain for one member of the team is a gain for the whole team. Pupils realise that they need each other to fulfil the group task. The teachers can structure the positive interdependence establishing *aims, mutual objectives* (“learn and see that all members of the group learn”), *mutual rewards* (team acknowledgement on the basis of members` contribution), *mutual resources, cooperative tasks* (identifying those tasks that would motivate and direct the group), *distributed roles* (the one that resumes, the one that encourages the others, the one that formulates the answer).

Learning tasks

In the field related literature we can read about learning tasks that focus on the learning activity determining different types of group interaction:

- *Task of disjunctive type* The group has to make a selection of each member's answers and contributions. The best solution is identified.
- *Task of conjunctive type*. Implies that the productivity of the group is linked to each member's efficiency, even to the weakest one.

- *Task of additional type.* The result of group's activity is the sum of each member's contribution.

- *Tasks of discretionary type.* The members of the group can mix individual options in any way they want. The final solution is the result of all participants' contribution.

Direct Interaction

Pupils help each other in the learning process, encouraging themselves and sharing their ideas.

They explain the others what they know, discuss, teach one another. The teacher arranges the groups so as the pupils to sit one next to the other and discuss each aspect of the task they have to solve.

Individual responsibility

Each student's performance is frequently assessed and the result is presented to him and the group. The teacher can highlight individual responsibility choosing pupils at random for a test, or choosing one member of the group the give the answer.

Interpersonal and small group skills

Groups can not exist or function efficiently if students don't enhance certain absolutely necessary social skills. Students must develop these skills the way they are taught different things. They include conducting, decision making, confidence building, communication, conflict management. Pupils are taught, helped, monitored in using collaborative social capacities that increase the efficiency of group work.

Group processing

Groups need certain moments to discuss how well they have achieved their goals and to maintain efficient work relations among group members. Teachers provide necessary conditions for processing through tasks like: (a) enumerate at least 3 actions of group members that led to group success or (b) enumerate at least one action that could increase the group's success the next day. The teacher permanently monitors the learning and gives feedback them and the whole class about the way they work

Students' role

Within each group the roles pupils play can be oriented towards the task, the group maintenance or both. Because students have to get accustomed to both categories, the teacher sometimes distributes specific roles like the ones below. Pupils' attention is drawn on isolated roles to make them aware of each role's necessity. They have to change roles for each activity because the purpose of the activity is to make them able to perform them all simultaneously. At group's level the following roles can be assigned: *the Assessor*: verifies whether everyone understands what is being worked at, *the Spy* searches for necessary information at other groups or, occasionally, at the teacher, *the Time keeper* pays attention that the group focuses on the task and respect the given amount of time, *the Active listener* repeats and reformulates what other have said, *the Interrogator* extracts information from group members and the *Résumé* draws the conclusions so that they make sense, *the Encourager* congratulates, helps, encourages each member of the group; *the Responsible for Materials* distributes and collects the necessary material, *the Reader* reads the written materials, the Speaker presents the group's conclusions in from of the class

Conclusions

Creating a learning situation involves a value orientation and the option for the ways of structuring pupils' interdependence. The chosen type of structure determines the way pupils will interact with the others and the results they will obtain.

The application of these models implies accepting the change of the actors' role, generating positive effects on cognitive, affective-motivational, metacognitive and social level. This contributes significantly to one's full development and to the development of intra and interpersonal competences. (acc to. M. Roco, 2004, p. 141):

- The conscience of self and own emotions (self-conscience as introspection, recognition of feelings according to the way and moment they appear).
- Emotion control (self-control as possibility of realizing what determines the feelings according to the moment and cause of their occurrence and as possibility to diminish negative feelings: anger, fear, anxiety, etc),
- Interior motivation (motivation as exercise of emotion and feeling guidance towards reaching certain goals when there is no reward at stake),
- Empathy (the capacity to understand the others from a affective and sentimental point of view),
- Establishing and guiding interhuman relations (social abilities that occur as manipulative competences that can control other people's emotions).
- Development of metacognitive feelings (through feelings of familiarization, of task difficulty, of trust and satisfaction)

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SKILLED SERVICE HOURS IN THE PROFESSIONAL CHILD CARE – FLEXIBILITY AND SOCIAL ACCOUNTABILITY

Calin DRAGOI

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Abstract: *Actual life-oriented approach* (You can not learn to swim without going into the water)

Resources-oriented approach (Strengths- to recognize and develop them)

Solution-oriented approach (Find solutions - „here“ and „now“)

(EJO-2009 *Betreutes Wohnen n. Fachleistungsstunden* 3.6. in

[www.jugendhilfe-](http://www.jugendhilfe-obernjesa.de/info/download/leistungsbeschreibungen/EJO_3_6_FlexH_Fachleistungstunde.pdf)

[obernjesa.de/info/download/leistungsbeschreibungen/EJO_3_6_FlexH_Fachleistungstunde.pdf](http://www.jugendhilfe-obernjesa.de/info/download/leistungsbeschreibungen/EJO_3_6_FlexH_Fachleistungstunde.pdf))

On the way to reform and to improve the child care system Romania developed in the last years a long range of specialised institutions and bodies. The main idea was to improve the system in a way that will make it able to take into consideration the main European trends and European methodologies, but simultaneously also the specificity of the local and regional structures, mentalities and historical developments and that will make it able to face some of the specific economic, financial and social challenges of the Romanian present day society.

Despite some difficulties (most of them as a result of a chronically lack of specialists and practitioners – care workers, care takers, pedagogues, educators), the classical institutionalised childcare knew a strong decrease and many of still existing formal care institutions changed not only the name (from “home for children” to the insipid and uninspired “placement centres”) but also their “traditional” organisation (based on rigid structures and rigorously organised day cycles) and their way of working with the institutionalised children and young people.

One of the main witnessed trends was the interest to introduce into the daily practice more flexibility and to find care measures and care work-patterns that are more appropriate to the actual needs of the child and to its quotidian life. Through the additional specialist hours there should be increased the support for young people with additional needs in terms of individually contracted hours of child and youth services.

The paper presents some possibilities of increasing the efficiency of the care work through a flexible professional care setting, respectively through the so-called “skilled service hours” and also some models and patterns of action. Based on the long experience accumulated in the German child-care system, the paper details some of the premises, of the functioning conditions, of the strengths and weaknesses of this way of structuring and implementing care interventions and of making them increasingly efficient.

Keywords: *flexible setting of professional care, part-time interventions, skilled service hours, professional care-services*

1. Hilfe durch Fachleistungsstunden (FLS). Prämisse.

Die Flexibilisierung der Jugendhilfe allgemein und die Implementierung der Fachleistungsstunden als Gestaltungsmethode der „flexiblen Hilfe“ bedeuten für Rumänien, das einerseits mit einer erhöhten Heterogenität der Bevölkerungsgruppen, die Hilfe für Erziehung benötigen, und andererseits mit einer mangelnder konzeptionellen Kohärenz auf der Ebene der NGO-s und staatlichen oder teilprivatisierten Kinder- und Jugendhilfeeinrichtungen konfrontiert ist, effiziente Alternativen, Alternativen die auch finanziell unterstützbar sind und fachlich schnell und mit unmittelbaren positiven Wirkungen umgesetzt werden können.

Der Begriff der Fachleistungsstunden ist in der Fachliteratur immer noch nicht endgültig definiert.

„Die sozialpädagogische Fachleistungsstunde gilt als innovatives Finanzierungsinstrument der neunziger Jahre. Insbesondere in den so genannten Jugendhilfestationen in den neuen Bundesländern wurde das Instrument der Fachleistungsstunde zur Finanzierung von „flexiblen Hilfen aus einer Hand“ und somit als Ergänzung zu den traditionellen Finanzierungsformen eingeführt. Die Fachleistungsstunde findet zurzeit überwiegend Anwendung im Bereich der ambulanten, hilfeplangesteuerten Leistungen der Erziehungshilfe, sowohl einzelfallbezogen als auch gruppenbezogen.

Im Bereich der stationären Erziehungshilfe wird die Fachleistungsstunde in der Regel als Instrument zur Finanzierung von Zusatzleistungen genutzt und im Einzelfall bewilligt“.¹

„Die Fachleistungsstunde nimmt als Finanzierungsmodell für erzieherische Hilfen eine radikale Position ein: Sie koppelt die Finanzierung transparent an die Leistung für den Einzelfall. Mit der Fachleistungsstunde sollte eine "einheitliche Währung" der erzieherischen Hilfen etabliert werden. Die Idee der Fachleistungsstunde ist nicht am "grünen Tisch", sondern aus der sozialpädagogischen Praxis heraus entwickelt worden“.²

Unter Fachleistungsstunde wird in der Regel die Zeiteinheit verstanden, die direkt am Klienten verbracht wird („face- to-face“). Dabei gibt es Vereinbarungen, die darüber hinaus eine gesonderte Berechnung von Fahrtzeiten und Fahrtkosten ermöglichen oder die eine

zusätzliche Abrechnung von Supervisionsleistungen ermöglichen.³

Das Konzept der Fachleistungsstunden beeinflusst nicht nur die finanziellen Aspekte der ambulanten Erziehungshilfen, sondern auch die fachlichen Standards. Es existiert hierzu kein Konsens, sondern einfach eine irritierende Vielfalt von Begriffen und Gestaltungsmodi. Die Fachstandards sind verschieden und in fast jedem Land herrschen andere Regeln und andere Abrechnungsregeln. Das

¹Plaßmeyer, F., Kohlmeyer, M., - „Finanzierungsmodelle im Kontext von wirkungsorientierter Steuerung der Hilfen zur Erziehung“ in Wirkungsorientierte Jugendhilfe, ISA, Münster, 2009, Band 07, S. 16)

² „Finanzierungsmodell: Fachleistungsstunde“ – VSP – Verbund für Soziale Projekte - <http://www.vsp-mv.de/wirueberuns/finanzierungsmodell.aspx>

³ MenTeo – „Selbstständig in der Sozialen Arbeit. Berechnung von Fachleistungsstunden.“ <http://menteo.de/page2/page7/page7.html>

Fachleistungsstundenkonzept und die Fachstandards sind immer häufiger in Diskussion geraten⁴.

In der Regel sind einige Voraussetzungen zu berücksichtigen:

- Als Grundlage für die Ausgestaltung der Hilfe dient der individuelle Hilfeplan⁵⁶, der Feststellungen über den Bedarf, die zu gewährende Art der Hilfe sowie die notwendigen Leistungen enthält.

- Aus ihm müssen sowohl die qualitativen als auch die quantitativen Merkmale der Leistungen hervorgehen. Grundlage für die Bemessung der Anzahl von Fachleistungsstunden ist eine fallbezogene, zeitnahe Bewilligung.

- Die Fachleistungsstunde (FSL) ist ein Instrument zur Ermittlung, Darstellung und Abrechnung von Entgelten für Leistungen der Jugendhilfe. Sie ergänzt die traditionellen Finanzierungsformen (Tageskostensatz und pauschale Kostenerstattung z. B.).

In der Fachliteratur werden zahlreiche Vor- und Nachteile verschiedener Modelle der sozialpädagogischen Fachleistungsstunden in der Praxis benannt (Tabelle 1)

Tabelle 1- Vorteile und Nachteile von auf Pauschalen basierenden

⁴ „*Quo Vadis Fachleistungsstunde? Fachstandards & Fachleistungsstunde im Diskurs*“ - Der AFET - Bundesverband für Erziehungshilfe e.V., Fachtag, 19.06.2012 http://www.afet-ev.de/aktuell/AFET_intern/PDF-intern/

⁵In Deutschland nach § 36 SGB VIII (siehe Endnote i.)

1) Der Personensorgeberechtigte und das Kind oder der Jugendliche sind vor der Entscheidung über die Inanspruchnahme einer Hilfe und vor einer notwendigen Änderung von Art und Umfang der Hilfe zu beraten und auf die möglichen Folgen für die Entwicklung des Kindes oder des Jugendlichen hinzuweisen. Vor und während einer langfristigen Hilfe außerhalb der eigenen Familie ist zu prüfen, ob die Annahme als Kind in Betracht kommt. Ist Hilfe außerhalb der eigenen Familie erforderlich, so sind die in Satz 1 genannten Personen bei der Auswahl der Einrichtung oder der Pflegestelle zu beteiligen. Der Wahl und den Wünschen ist zu entsprechen, sofern sie nicht mit unverhältnismäßigen Mehrkosten verbunden sind. Wünschen die in Satz 1 genannten Personen die Erbringung einer in § 78a genannten Leistung in einer Einrichtung, mit deren Träger keine Vereinbarungen nach § 78b bestehen, so soll der Wahl nur entsprochen werden, wenn die Erbringung der Leistung in dieser Einrichtung nach Maßgabe des Hilfeplans nach Absatz 2 geboten ist.

(2) Die Entscheidung über die im Einzelfall angezeigte Hilfeart soll, wenn Hilfe voraussichtlich für längere Zeit zu leisten ist, im Zusammenwirken mehrerer Fachkräfte getroffen werden. Als Grundlage für die Ausgestaltung der Hilfe sollen sie zusammen mit dem Personensorgeberechtigten und dem Kind oder dem Jugendlichen einen Hilfeplan aufstellen, der Feststellungen über den Bedarf, die zu gewährende Art der Hilfe sowie die notwendigen Leistungen enthält; sie sollen regelmäßig prüfen, ob die gewählte Hilfeart weiterhin geeignet und notwendig ist. Werden bei der Durchführung der Hilfe andere Personen, Dienste oder Einrichtungen tätig, so sind sie oder deren Mitarbeiter an der Aufstellung des Hilfeplans und seiner Überprüfung zu beteiligen. Erscheinen Maßnahmen der beruflichen Eingliederung erforderlich, so sollen auch die für die Eingliederung zuständigen Stellen beteiligt werden.

(3) Erscheinen Hilfen nach § 35a erforderlich, so soll bei der Aufstellung und Änderung des Hilfeplans sowie bei der Durchführung der Hilfe die Person, die eine Stellungnahme nach § 35a Abs. 1a abgegeben hat, beteiligt werden.

(4) Vor einer Entscheidung über die Gewährung einer Hilfe, die ganz oder teilweise im Ausland erbracht wird, soll zur Feststellung einer seelischen Störung mit Krankheitswert die Stellungnahme einer in § 35a Abs. 1a Satz 1 genannten Person eingeholt werden.

Leistungsentgelten, tagesgleichen Leistungsentgeltsätzen und sozialpädagogischen Fachleistungsstunden⁷

| | Leistungsentgelte basierend auf Pauschalen | Tagesgleiche Leistungsentgeltsätze | Sozialpädagogische Fachleistungsstunden (FLS) |
|------------------|--|---|--|
| Vorteile | <p>Geringerer Verwaltung- und Verhandlungsaufwand gegenüber dem Einzelentgeltsatz</p> <p>Erhöhte Anreize zu wirtschaftlicher und sparsamer Haushaltsführung</p> <p>Gegenseitige Deckungsfähigkeit von Aufwandspositionen untereinander</p> <p>Keine notwendige Offenlegung der Kostenstruktur des Leistungserbringers gegenüber dem Öffentlichen Träger der Jugendhilfe</p> <p>Wirtschaftliche Existenzabsicherung der Einrichtung durch vorgegebenen Sockelbetrag, der auf Durchschnittswerten basiert.</p> | <p>Das „Standardsystem“ ist leicht verständlich und im Erziehungshilfebereich etabliert</p> <p>Vergleichbarkeit bei gleichwertigen Angeboten</p> <p>Niedrigschwellige und präventive Ansätze können durch eine entsprechende Hinzurechnung zu den o. a. Jahreskosten berücksichtigt werden. In diesem Fall würden die prospektiven Jahreskosten und die prospektiven „Präventivkosten“ addiert und auf einen Tag umgerechnet.</p> | <p>Orientierung am individuellen Hilfebedarf</p> <p>Hohe Flexibilität und Vernetzungsmöglichkeit</p> <p>Steuerungsmöglichkeiten durch öffentlichen Träger der Jugendhilfe</p> |
| Nachteile | <p>Einrichtungsspezifische Kostenstrukturen werden nicht berücksichtigt. Hiermit ist gemeint, dass während die Einrichtung ihre Einnahmen nur in gewissen Punkten nach „behördlich“ vorgegebenen Bewertungsmaßstäben vergütet bekommt, sie</p> | <p>Der Tagesentgeltsatz ist statisch (starr) und wird i. d. R. über einen längeren Zeitraum gezahlt.</p> <p>Gefahr der Fallausweitung (Mengenexpansion), die Entlassung des jungen Menschen stellt ein betriebswirtschaftliches Risiko dar.</p> <p>Kaum Anreize zur Verweildauerreduzierung,</p> | <p>Ein in der Regel hoher administrativer Aufwand (Dokumentation, Fakturierung)</p> <p>Durch Vermischung von realen Kosten und Durchschnittswerten (z. B. Anwendung von KGST-Richtwerten im Bereich der variablen und fixen Sachkosten) entsteht ein</p> |

⁷Plaßmeyer, F., Kohlmeyer, M., - „Finanzierungsmodelle im Kontext von wirkungsorientierter Steuerung der Hilfen zur Erziehung“ in Wirkungsorientierte Jugendhilfe, ISA, Münster, 2009, Band 07, S. 14 - 16

| | | | |
|--|---|--|--|
| | <p>umgekehrt ihre eigenen Ausgaben mit echtem Geld bezahlen muss (Risiko). In den meisten Fällen werden enge Mengen- und Leistungsvorgaben gemacht, die auf einem gewissen Misstrauen basieren und dementsprechend Kosten- und Qualitätsniveaus vorgeben.</p> | <p>da für den Einrichtungsträger eine längere Verweildauer kostengünstiger ist und eine Verweildauerverkürzung bei gleich bleibender Auslastung zu höheren Kosten je Betreuungstag führt (Anlaufkosten). Mangelnder Kosten- und Leistungsbezug (Kostenungerechtigkeit) Tagesgleiche Entgeltsätze entsprechen nicht dem Kostenanfall im zeitlichen Ablauf</p> | <p>Kostendeckungsrisiko für die Seite des Einrichtungsträgers. Mangel an Transparenz und Leistungsgerechtigkeit Erhebliche Planungsunsicherheit bezüglich Fallaufkommen und Einnahmesituation beim freien Träger der Jugendhilfe Unterschiedliche Abrechnungsverfahren bei Einzelfall- und Gruppenhilfen Schwierigkeit der Finanzierung von Maßnahmen, die teilweise einer anderen Finanzierungssystematik unterliegen (z. B. Vernetzung von stationären oder offenen mit ambulanten Maßnahmen)⁸ Tendenz zur Fallausweitung</p> |
|--|---|--|--|

2. Nettojahresarbeitszeit einer Fachkraft⁹

Die Nettojahresarbeitszeit ist die um die allgemeinen Minderzeiten und um die berufsspezifischen Minderzeiten bereinigte Jahresarbeitszeit einer Fachkraft.

Sie ist die Zeit, die unmittelbar für fallspezifische, fallübergreifende und fallunspezifische Tätigkeiten aufgewendet werden kann.

Die Nettojahresarbeitszeit ist auf dieser Basis identisch mit den durchschnittlich verfügbaren Jahresbetreuungsstunden einer Fachkraft. Sie ist die Zeit, die tatsächlich für einzelfallbezogene Tätigkeiten aufgewendet werden kann. Diese umfassen im Einzelnen:

(a) unmittelbare einzelfallbezogene Leistungen

⁸16 Vgl. Plasmeyer, Frank, Die Finanzierung von „Flexiblen Erziehungshilfen“ in Nordrhein-Westfalen. In: Landschaftsverband Westfalen-Lippe – Landesjugendamt (Hg.), Flexibilisierung erzieherischer Hilfen, 2000, S. 24 ff.

⁹ Reichl, A. –, *Die Fachleistungsstunde in der Jugendhilfe. Leistungsbeschreibung und Entgeltvereinbarung nach § 78 SGB VIII am Beispiel Niedersachsen in Bundesfachgruppe Selbständige*“ im DBSH (Deutscher Berufsverband für Sozialarbeit a. V.), Hannover, 2006, S. 2

Dies sind solche Leistungen, die unmittelbar im Kontakt mit dem jungen Menschen

erbracht werden oder sich auf andere Weise eindeutig diesen zuordnen lassen.

Dazu gehören bspw.:

- Arbeit mit dem jungen Menschen
- fallbezogene Gespräche/Kontakte mit Lehrer/innen, Ausbildern u.a.
- fallbezogene Gespräche/Kontakte mit Behörden
- Hilfeplangespräche
- Konfliktlösung und Interventionen in Krisensituationen

(b) mittelbare einzelfallbezogene Leistungen:

Dies sind solche Leistungen, die im Rahmen der Ablauforganisation und Kommunikation innerhalb der Einrichtung der Vor- und Nachbereitung unmittelbarer Leistungen dienen. Im Einzelnen:

- Planung und Vorbereitung des Hilfesettings
- Vor- und Nachbereitung von pädagogischen Maßnahmen
- Vor- und Nachbereitung von Hilfeplangesprächen
- Fallbesprechungen/kollegiale Beratung und mit ASD
- Leistungsdokumentation; Berichtswesen/Statistik
- Fahrt- und Wegezeiten

Die Kalkulation der Fachleistungsstunde sieht dann z.B. folgendermaßen aus:

- Tarifliche Lohnkosten einer sozialpädagogischen Fachkraft
- + 10 % Tarifliche Lohnkosten für Leitungsfunktionen
- + 20 % Tarifliche Lohnkosten für Verwaltungskraft = Personalkosten
- + Sachkosten = 10 % der Personalkosten
- Personalkosten + Sachkosten = Gesamtkosten. Gesamtkosten /persönliche Jahresbetreuungszeit (Std.) = Entgelt für Fachleistungsstunde

Kalkulation der Fachleistungsstunden (Beispiel)¹⁰

| 251 Bruttoarbeitstage abzüglich Ausfälle, Erkrankungen, Kur- u. Heilverfahren, Erholungsurlaub, Bildungsurlaub, Mutterschutz, Wehrübungen etc. | bereinigte, jährliche Arbeitszeit einer Normalarbeitskraft (bei 38,5 Wochenstunden) | abzüglich berufsspezifische Minderzeiten - 10 % | abzüglich fallspezifische Minderzeiten | Nettojahres- arbeitsstunden pro Fachkraft (bei 0% fallspezifischer Minderzeit) |
|---|--|---|---|--|
| abzüglich 46,55 Tage pro Jahr | 1.574 Std. | 157,4 Std. | 0 % bis - 10 % | 1.416,6 Std. |

¹⁰Anlage IV des Rahmenvertrages Jugendhilfe NRW, Teil I und Teil II zu § 9 Ziffer 5 Punkt 3 des Rahmenvertrages Jugendhilfe NRW, Teil I und Teil II,
http://www.lvr.de/media/wwwlvrde/jugend/hilfzurerziehung/dokumente_65

Aus dem aufgestellten Hilfeplan müssen für die Bemessung der Stundenzahl sowohl die qualitativen als auch die quantitativen Merkmale der Leistungen durch eine Beschreibung der:

- (a) fallspezifischen (face-to-face),
- (b) fallübergreifenden (z. B. Gespräche mit dem Jugendamt, Eltern, Lehrern, Ausbildern, erforderlichen Wegezeiten) und
- (c) fallunspezifischen (z. B. Herstellung sozialräumlicher Vernetzung) Leistungsanteile hervorgehen.

2.1 Allgemeine Minderzeiten / bereinigte Jahresarbeitszeit

Ausgangsgröße für die Ermittlung der Nettojahresarbeitszeit ist die Bruttojahresarbeitszeit. Die Richtzahl beträgt für die bereinigte Arbeitszeit einer Normalarbeitskraft jährlich ca. 1575 Stunden.

2.2 Berufsspezifische Minderzeiten

Unter berufsspezifischen Minderzeiten sind fallübergreifende und allgemeine Aufgaben einer Fachkraft zu fassen, wie z. B.

- Teamsitzungen
- Supervision
- pädagogische Gesamtkonferenzen (Sitzungen)
- Facharbeitskreise¹¹

Eine Größenordnung von ca. 157 Jahresarbeitsstunden (10 % der bereinigten Jahresarbeitszeit) wird in der Fachliteratur als angemessen angenommen¹².

2.3 Fallspezifische Minderzeiten

Die Berechnung der Nettojahresarbeitszeit basiert auf der Annahme, dass die verfügbaren Jahresbetreuungsstunden auch geleistet und abgerechnet werden können. Dies ist jedoch nur theoretisch möglich. Praktisch wird es nicht leistbar sein, die Fachleistungsstunden einer Fachkraft so aufeinander abzustimmen, dass keine Warte- bzw. Überbrückungszeiten auftreten¹³.

- Je größer die Betreuungsintensität (vereinbarte Stundenzahl pro Woche und Fall), umso besser sind Anschlusszeiten zu vereinbaren und umso geringer ist der Auf-

¹¹Rahmenvertrag II NRW – Anlage IV – S. 63,

http://www.jugendsozialarbeit.info/jsa/lagkjsnrw/lagkjsnrw_web.nsf

¹²Reichl, A. - Die Fachleistungsstunde in der Jugendhilfe. Leistungsbeschreibung und Entgeltvereinbarung nach § 78 SGB VIII am Beispiel Niedersachsen in Bundesfachgruppe Selbständige im DBSH (Deutscher Berufsverband für Sozialarbeit a. V.), Hannover, 2006, S. 3, <http://menteo.de/page15/page17/page17.html>

- Kröger, Rainer (b): Leistung, Entgelt und Qualitätsentwicklung in der Jugendhilfe. In: Becker- Textor Ingeborg, Textor Martin R.: SGB VIII Online Handbuch. <http://www.sgbviii.de/S45.html>

- Münder, Johannes; Tammen, Britta: Die Vereinbarungen nach §§ 78a ff. SGB VIII. Eine Untersuchung von Leistungs-, Entgelt- und Qualitätsentwicklungsvereinbarungen. http://www.bmfsfj.de/RedaktionBMFSFJ/Abteilung5/Pdf-Anlagen/leistungsvereinbarung-C2_A778.property=pdf,bereich=,rwb=true.pdf

¹³ Rahmenvertrag II NRW – Anlage IV – Fachleistungsstunde nach § 9 des Rahmenvertrages http://www.jugendsozialarbeit.info/jsa/lagkjsnrw/lagkjsnrw_web.nsf, S.62 - 65

wand für die Organisation und Koordination der Betreuungsleistungen für die sozialpädagogische Fachkraft.

Eine Gewichtung der fallspezifischen Minderzeiten ist jeweils fallbezogen mit dem jeweiligen Kostenträger abzustimmen.

- Berufsspezifische und fallspezifische Minderzeiten sollten nicht mehr als 20% der bereinigten Arbeitszeit betragen. Überschreitungen können im Rahmen der Entgeltverhandlungen im Einvernehmen mit dem Öffentlichen Träger der Jugendhilfe vereinbart werden.

3. Vorstellung und Diskussion konkreter Hilfsmittel. Fachleistungsstundenkontingente

3.1. Fachliche Ausrichtung der Einrichtung

• Lebensweltorientiert („Man kann nicht schwimmen lernen ohne ins Wasser zu gehen“.)

• Ressourcenorientiert („Stärken wahrnehmen und ausbauen“)

• Lösungsorientiert („Lösungen im Hier und Jetzt finden“)¹⁴

3.2. Methodische Grundlagen

• Einzelfallhilfe (Hauptschwerpunkt)

• Gruppenarbeit und Freizeitaktivitäten

• Beratung (systemischer Ansatz)

• Hilfen werden individuell angepasst, in jedem Fall aber

- von entsprechend berufs- und lebenserfahrenen Pädagogen/innen durchgeführt

- der besondere Betreuungsbedarf des Kindes/Jugendlichen wird berücksichtigt.

• Wenn notwendig, können ergänzend psychotherapeutische Hilfen durch externe Therapeuten erfolgen.¹⁵

3.3. Als **fachspezifische Aktivitäten** gelten:

- Praxisberatung und -anleitung

- Supervision

- Teamsitzungen

- Pädagogische (Gesamt)Konferenzen (Mitarbeiterdienstbesprechungen)

- Planungs- und Grundsatzarbeiten für die Einrichtung oder das

Unternehmen - Arbeitsgemeinschaften und Facharbeitskreise

3.4. Als **fallspezifische Aktivitäten** gelten:

- Einzelfallarbeit („face-to-face“)

- Hilfeplangesprächen

- Kontakte zu Behörden und Institutionen

- Dokumentation und Berichtswesen

¹⁴EJO-2009 Betreutes Wohnen n. Fachleistungsstunden 3.6. in www.jugendhilfe-obernjesa.de/info/download/leistungsbeschreibungen/EJO_3_6_FlexH_Fachleistungsstunde.pdf, S. 1

¹⁵EJO-2009 Betreutes Wohnen n. Fachleistungsstunden 3.6. in www.jugendhilfe-obernjesa.de/info/download/leistungsbeschreibungen/EJO_3_6_FlexH_Fachleistungsstunde.pdf, S. 1

- Fehlgeschlagene Kontakte, Wartezeiten, Überbrückungszeiten
- Fahrt – und Wegzeiten

3.5. Die Analyse der Leistungen und Methoden der Unterstützung und der individuelle Betreuungsbedarf der Kunden für ambulante Erziehungshilfen(Tabelle 2) ermöglicht die Gruppierung des notwendigen Fachleistungsstundenkontingentes in fünf "Bedarfsgruppen", wie folgt (Tabelle 3)

Tabelle 2(Beispiel)
Fachleistungsstundenkontingent (FLSK)

Name, Vorname Geb. Datum:.....

| Lebensbereich(Kooperations-/Interaktionspartner | Maßnahmen/ Methodisches Vorgehen | Komponente alltäglichen Lebensführung | der FLSK / Woche | FLSK / Monat |
|---|--|--|--|--------------------|
| Lebenspraxis/ Alltags -gestaltung | Mitbewohner Personensorgeberechtigte Vermieter Nachbarn Partner Mitbewohner | Anleitung (nicht Übernahme), Kontrolle, Rückmeldung, Motivation zu körperlicher Bewegung | 1. Einkaufen - "Kompleten" Bedarf an Lebensmittel und Gegenständen des täglichen Bedarf auswählen und einkaufen - persönliche Dinge wie Zeitschriften, Zigaretten, Kosmetikartikel einkaufen Zubereitung von Mahlzeiten, Ernährung - Zwischenmahlzeitenwie Frühstück und Abendessen inkl. Getränke zubereiten - Zubereitung warmer Hauptmahlzeiten | |

| | | | | | |
|-----------------------------------|--|---|---|--|--|
| | | | <ul style="list-style-type: none"> - Auswahl von Art und Menge der Nahrung -essen und trinken <p>2. Zeitliche und Räumliche Orientierung</p> <ul style="list-style-type: none"> - Tages- und Nachtrhythmus einhalten - Zeitbedarf einschätzen -sich in fremder 1 Umgebung zurechtfinden (z.B. nach dem Weg fragen, Hinweisschilder beachten, Fahrpläne lesen, öffentlichen Verkehrsmittel benutzen) | | |
| Haushalts-führung / Wohnen | Wohnung Wäschepflege Hygiene Körperpflege/Ernährung | Anleitung (nicht Übernahme), Kontrolle, Rückmeldung, Motivation | <p>3. Wäschepflege</p> <ul style="list-style-type: none"> -Schmutzwäsche sammeln - Wäsche waschen und trocknen - Wäsche zusammenlegen, bügeln - Wäsche einräumen und Kleidung Instandhaltung <p>4.Ordnung im eigenen Bereich und</p> | | |

| | | | | | |
|---|--|--|---|--|--|
| | | | <p>Instandhaltung/ Instandsetzung von Haushaltsgegenständen</p> <ul style="list-style-type: none"> - aufräumen, reinigen, putzen - kleinere Reparaturen durchführen <p>5. Körperpflege</p> <ul style="list-style-type: none"> - eigenständig baden oder duschen (körperliche Fähigkeit und Motivation) - Kleidung (nach Witterung oder Anlass) auswählen <p>6. Wohnung suchen und einrichten</p> | | |
| <p>Finanzen und (sozial-) rechtlichen Angelegenheiten.</p> | <p>Lebensunterhalt Jugendamt Ausländerbehörde Sozialamt Schule/Arbeitsagentur Banken</p> | <p>Sicherung des Lebensunterhalts, Begleitung bei der Durchsetzung von Leistungsansprüchen, Einteilung, Assistenz, Ausgabenplanung, Haushaltskonto</p> | <p>7. Geld verwalten</p> <ul style="list-style-type: none"> - mit kleineren Beträgen (z.8. Taschengeld) umgehen - mit größeren Beträgen umgehen, das eigene Geld einteilen, mit Geld wirtschaften, Geld sparen, etc. <p>8. Regeln von finanziellen und (sozial-) rechtlichen</p> | | |

| | | | | | |
|---|--|---|---|--|--|
| | | | <p>Angelegenheiten</p> <ul style="list-style-type: none"> - Asylangelegenheiten - Behördengänge - Telefongespräche / Korrespondenz mit Ämtern, Bank, etc. - Konto führen, Überweisungen tätigen | | |
| <p>Gestaltung sozialer Beziehungen</p> | <p>Partner Mitbewohner Nachbarn Freunde Eltern Verwandte</p> | <p>Entwicklungsdiagnostik, Eltern- /Angehörigenarbeit, Initiieren von Kontakten, Hilfestellung, Beratung, Moderieren in Konfliktsituationen, Unterstützung bei der Bedürfnisartikulation/ Selbstmitteilung, Erschließung von Hilfen im Umfeld</p> | <p>9. Gestaltung sozialer Beziehungen</p> <ul style="list-style-type: none"> - mit Spannungen und Konflikten umgehen - Beziehungen zu Mitbewohnern, Nachbarn, Mitarbeiter/Innen pflegen - Beziehungen zu Angehörigen pflegen - Beziehungen zu Freund/en und Partner/-in pflegen - Anderen helfen (z .B. kranken oder schwächeren Haushaltmitgliedern beim Lernen, Selbstversorgung etc. helfen) | | |

| | | | | | |
|-------------------------------------|---|---|--|--|--|
| | | | - Aufgabe übernehmen | | |
| Ausbildung und Beschäftigung | Schulen /Ausbildungsstätte Arbeitsagentur Arbeitgeber | Information, Beratung, Vermittlung in Fachberatung, Erschließung von Hilfen im Umfeld | 10. Entwickeln von Zukunftsperspektiven, Lebensplanung - Leistungen in der Schule - sich auseinandersetzen mit Fragen wie „Wie will ich mein Leben gestalten?“ - Verfolgen von Lebensplänen - Nachhilfe suchen und organisieren - Praktikum und Ausbildungsplätze suchen - Bewerbungsunterlagen vorbereiten | | |
| Freizeit | Mitbewohner Freunde Partner | Hinweis auf Angebote, Foren zum Erfahrungsaustausch, Anleitung zur Reflexion des eigenen Freizeitverhaltens | 11. Gestaltung freier Zeit / Eigenbeschäftigung - Freie Zeit selbst gestalten (Vorlieben, Hobbies pflegen, sich selbstbeschäftigen, etc.) - sich über | | |

| | | | | | |
|---|--|--|--|--|--|
| | | | Freizeitangebote / kulturelle Veranstaltungen informieren und Angebote auswählen - an Freizeitangeboten / kulturellen Veranstaltungen teilnehmen | | |
| Besonderer Hilfebedarf,Medikamente | Ärzte Therapeuten Psychotherapeuten Krankenversicherung | Begleitung zum Behandler, Erinnerung und Kontrolle bei der Durchführung der Behandlung Erinnerung, Kontrolle, Motivation | 12. Gesundheitsförderung und -erhaltung - Auswahl eines Arztes - Terminvereinbarung - Arztbesuche - sich Hilfe-und Unterstützung im Falle von Krankheiten oder Unwohlsein suchen / organisieren - Vermeiden gesundheitsschädigender Verhaltensweisen - gesundheitsfördernde Verhaltensweisen wie z.B. körperliches Training, Bewegung, gesunde Ernährung etc. zeigen | | |

| | | | | | |
|------------------------------|---|--|--|--|--|
| | | | - Dosierung und Einnahme von Medikamenten - (Körper-) Übungen | | |
| Psychische Gesundheit | Bewältigung der psychischen Erkrankung (psychischen Trauma) | Gespräch, Motivation zur Auseinandersetzung (Vermeidung von Vermeidung) Erfahrungsaustausch, Beobachtung, Rückmeldung, Entwicklung und Begleitung therapeutischer Aufgaben, intensives Üben, Psychoedukation, Krisenprävention, Krisenbegleitung | | | |
| FSL Gesamt | | | | | |

Tabelle 3 - Fachleistungsstundenkontingente (Beispiel)

| Einstufung | Zeitraum * | Stundenkontingent pro Woche | | | Stundenkontingent pro Monat | | |
|--------------------|---|-----------------------------|-----------|--------------------------|-----------------------------|-----------|--------------------------|
| | | Gesamt | Betreuung | Fallbezogene Tätigkeiten | Gesamt | Betreuung | Fallbezogene Tätigkeiten |
| FLS Stufe 1 | 3 – 6 Monate (Betreuung in den ersten 3 bis 4 Monaten nach der stationären Unterbringung) | 8 | 7 | 1 | 32 | 28 | 4 |

| | | | | | | | |
|--------------------|--|------------|-----|-----|-----------|----|---|
| | | | | | | | |
| FLS Stufe 2 | Wohnen in einer WG (FLS in der Wohngruppe) | 6 | 5 | 1 | 24 | 20 | 4 |
| FLS Stufe 3 | Eigene Wohnung (FLS in den ersten 6 bis 8 Monaten) | 4 | 3 | 1 | 16 | 12 | 4 |
| FLS Stufe 4 | Eigene Wohnung (FLS in den danach kommenden 6 bis 8 Monaten) | 3 | 2,5 | 0,5 | 12 | 10 | 2 |
| FLS Stufe 5 | Eigene Wohnung (nach 12 – 14 Monaten) | 2,5 | 2 | 0,5 | 10 | 8 | 2 |

** Die o. g. Zeiträume weichen von Fall zu Fall ab.*

In der Einschätzung des benötigten individuellen FL-Stundenkontingents soll die spezifische Situation der Kunden berücksichtigt werden, wie z. B.

- die Fluktuation (s. g. "Zeitdruck")

- vorherige spezifische Lebenserfahrungen der Kunden

- die Ergebnisse der vorgeleisteten Betreuungsarbeit (Erreichungsgrad der im Hilfeplangespräch formulierten Ziele, Selbständigkeit, Selbstbewusstsein, usw.)

Tabelle 4- Anzahl von Fachleistungsstunden (Beispiel)

| Leistungen /Stufe | FLS / Woche | | | | | FLS / Monat | | | | |
|--|-------------|-----|-----|-----|-----|-------------|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| Unmittelbare einzelfallbezogene Leistungen (Arbeit mit dem jungen Menschen) | | | | | | | | | | |
| Lebenspraxis/ Alltagsgestaltung. Haushalts-führung / Wohnen | 1,5 | 1 | 0,5 | 0,5 | 0 | 6 | 4 | 2 | 2 | 0 |
| Finanzen und (sozial-) rechtliche Angelegenheiten, (fallbezogene Gespräche/Kontakte mit Behörden u. a.) | 1,5 | 1 | 0,5 | 0,5 | 0,5 | 6 | 4 | 2 | 2 | 2 |
| Hilfeplangespräche, Gestaltung sozialer Beziehungen | 0,5 | 1 | 0,5 | 0 | 0 | 4 | 4 | 2 | 0 | 0 |
| Schule, Ausbildung und Beschäftigung (fallbezogene Gespräche/Kontakte mit Lehrer/innen, Ausbildern u.a.) | 1,5 | 1 | 0,5 | 1 | 1 | 6 | 4 | 2 | 4 | 4 |
| Freizeit | 0,5 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Besonderer Hilfebedarf, Konfliktlösung und Interventionen in Krisensituationen,Medikamente. Psychische Gesundheit. | 1 | 0,5 | 0,5 | 0 | 0 | 4 | 2 | 2 | 2 | 2 |
| Fallbezogene Tätigkeiten | | | | | | | | | | |
| • Planung und Vorbereitung des Hilfesettings | | | | | | | | | | |
| • Vor- und Nachbereitung von pädagogischen Maßnahmen | | | | | | | | | | |
| • Vor- und Nachbereitung von Hilfeplangesprächen | 1 | 1 | 1 | 0,5 | 0,5 | 4 | 4 | 4 | 2 | 2 |
| • Fallbesprechungen/ Beratung und mit ASD | | | | | | | | | | |
| • Leistungsdokumentation; Berichtswesen/Statistik | | | | | | | | | | |
| Fahrt- und Wegezeiten | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 2 | 2 | 2 | 2 | 2 |
| Gesamt | 8 | 6 | 4 | 3 | 2,5 | 32 | 24 | 16 | 12 | 10 |

Tabelle 5 – Auswertung über geleistete Fachleistungsstunden (Zeitraumbezogene Überblick über die erbrachten FLS)

| Übersicht der geleisteten Fachleistungsstunden vom 01.04.2012 bis zum 30.04.2012 | | | | | | | | | | |
|---|--------------|---------------------------|-------------------------------|-----------------------------------|-----------------------|----------|---------------------|------------------------|-----------|----------|
| Bereich: UMF – Ambulant Betreutes Wohnen | | | | | | | | | | |
| Erzieher: | | | | | | | | | | |
| Name, Vorname | Kostenträger | Bewiligungs- zeitraum | Bewilligte Std. (Netto) | Rest- kontingent (bis Ende) | Geleistete Stunden | Überlauf | Gruppen- stunden | Durchschnitt pro Woche | | |
| | | | | | | | | Geleistet | Bewilligt | Restzeit |
| P. M. | (Judet) | 01.01.2012- 01.07.2012 | 60 | 30 | 10 | 0,00 | 0,00 | 2,5 | 2,5 | 0,00 |
| | | | | | | | | | | |

¹**Sozialgesetzbuch (SGB) Achtes Buch (VIII) Kinder- und Jugendhilfe**

(Stand: Neugefasst durch Bek. v. 14.12.2006 I 3134; zuletzt geändert durch Art. 2 G v. 22.12.2011 I 2975)

§ 36 SGB VIII Mitwirkung, Hilfeplan

(1) Der Personensorgeberechtigte und das Kind oder der Jugendliche sind vor der Entscheidung über die Inanspruchnahme einer Hilfe und vor einer notwendigen Änderung von Art und Umfang der Hilfe zu beraten und auf die möglichen Folgen für die Entwicklung des Kindes oder des Jugendlichen hinzuweisen. Vor und während einer langfristig zu leistenden Hilfe außerhalb der eigenen Familie ist zu prüfen, ob die Annahme als Kind in Betracht kommt. Ist Hilfe außerhalb der eigenen Familie erforderlich, so sind die in Satz 1 genannten Personen bei der Auswahl der Einrichtung oder der Pflegestelle zu beteiligen. Der Wahl und den Wünschen ist zu entsprechen, sofern sie nicht mit unverhältnismäßigen Mehrkosten verbunden sind. Wünschen die in Satz 1 genannten Personen die Erbringung einer in § 78a genannten Leistung in einer Einrichtung, mit deren Träger keine Vereinbarungen nach § 78b bestehen, so soll der Wahl nur entsprochen werden, wenn die Erbringung der Leistung in dieser Einrichtung nach Maßgabe des Hilfeplans nach Absatz 2 geboten ist.

(2) Die Entscheidung über die im Einzelfall angezeigte Hilfeart soll, wenn Hilfe voraussichtlich für längere Zeit zu leisten ist, im Zusammenwirken mehrerer Fachkräfte getroffen werden. Als Grundlage für die Ausgestaltung der Hilfe sollen sie zusammen mit dem Personensorgeberechtigten und dem Kind oder dem Jugendlichen einen Hilfeplan aufstellen, der Feststellungen über den Bedarf, die zu gewährende Art der Hilfe sowie die notwendigen Leistungen enthält; sie sollen regelmäßig prüfen, ob die gewählte Hilfeart weiterhin geeignet und notwendig ist. Werden bei der Durchführung der Hilfe andere Personen, Dienste oder Einrichtungen tätig, so sind sie oder deren Mitarbeiter an der Aufstellung des Hilfeplans und seiner Überprüfung zu beteiligen. Erscheinen Maßnahmen der beruflichen Eingliederung erforderlich, so sollen auch die für die Eingliederung zuständigen Stellen beteiligt werden.

(3) Erscheinen Hilfen nach § 35a erforderlich, so soll bei der Aufstellung und Änderung des Hilfeplans sowie bei der Durchführung der Hilfe die Person, die eine Stellungnahme nach § 35a Abs. 1a abgegeben hat, beteiligt werden.

(4) Vor einer Entscheidung über die Gewährung einer Hilfe, die ganz oder teilweise im Ausland erbracht wird, soll zur Feststellung einer seelischen Störung mit Krankheitswert die Stellungnahme einer in § 35a Abs. 1a Satz 1 genannten Person eingeholt werden.

¹ Plaßmeyer, F., Kohlmeyer, M., - „Finanzierungsmodelle im Kontext von wirkungsorientierter Steuerung der Hilfen zur Erziehung“ in Wirkungsorientierte Jugendhilfe, ISA, Münster, 2009, Band 07, S. 14 - 16

¹⁶ Vgl. Plasmeyer, Frank, Die Finanzierung von „Flexiblen Erziehungshilfen“ in Nordrhein-Westfalen. In: Landschaftsverband Westfalen-Lippe – Landesjugendamt (Hg.), Flexibilisierung erzieherischer Hilfen, 2000, S. 24 ff.

REVIEW
THE METHODOLOGY OF EDUCATING SPEECH IN PRE-SCHOOL EDUCATION – AN EARLY EDUCATION BASED APPROACH*

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“1 Decembrie 1918” University, Alba-Iulia

Approaching pre-school education from based on early education, officially assumed through the *Curriculum for pre-school education* (2008) and through the document entitled *Fundamental Guide marks in learning and early development at children from birth to the age of seven* (approved by the order of the Ministry of Education no 3851/2010), brought about the necessity to reconsider initial and lifelong training at pre-school teachers. Even if the experience of those years when the new curriculum has been implemented, revealed progress towards the integration of pre-school education as a decisive part of early education, still there are numerous challenges and opportunities that have to be revalued. We are referring to aspects like organizing learning activities on experiential fields and correlating the later to the fields of child's personality development. We also refer to combining discipline related activities with integrated ones, to organizing the syllabus on units, to integrating games in different activities (routines, transitions, learning activities).

In this context, Gabriela Kelemen's book, is a successful approach to the methodology of educating speech in pre-school education based on the concept of early education. In connection with new curricular approaches, the book is illustrative as a model of correlation between the field of child's personality development (*The development of speech and communication*) and an experiential field in the structure of the curriculum (*Language and communication*), in the same time, offering guide marks for a more general model of the concept of child's global development. (central concept in the new vision upon early education).

From this perspective, the book begins with a chapter dedicated to the outline of a conceptual framework regarding communication and speech, where the author synthetically presents groups of information chosen according to their relevance for the didactic activity. She has presented well known theories and models regarding speech and communication (Chomsky, Skinner, Bandura, Brown), she has synthetized the main indicators of child's speech evolution from birth to the age of 6, she described the speech functions, presented the structure and the process of communication at pre-school level. The components of the communication ability are presented at the end of the chapter.

* Kelemen Gabriela (2012), *Metodica educării limbajului la nivel de învățământ preșcolar*, Editura Universității „Aurel Vlaicu”, Arad.

The 2nd chapter is dedicated to the goal and the objectives of the methodology of speech education and the presentation of the experiential field *Language and communication*, from the perspective of early education. The reader can find here information regarding the aims and objectives of this field, models of didactic planning for different types of activity. From the 3rd chapter, dedicated to activities of speech education in kindergarten, we want to draw attention on the paragraph referring to evaluation, where the author presents evaluation sheets adapted to this type of activities.

As expected in a methodology book, the most important chapter is dedicated to *specific forms of carrying out activities in the field of speech education*. Under this title, the author describes and exemplifies the didactic game, teacher's stories, children's stories (with their various forms) memorizing, conversation and image based reading. The presentation of these forms highlights the experience that the author has in pre-school education, in general, and in speech education, in particular. We notice the systematization, clarity and the highly applicative value of the work.

A selection of recommended contents would involve:

- Applications of activity planning based on didactic games (pp. 138-150) presented for each group (primary, middle, secondary, preparation), which allows us to notice the progress of this learning method throughout pre-school period;
- Applications of activity planning based on teacher's stories and children's retellings (pp. 158-167) for each group.
- Considerations and exemplifications based on memorizing and conversation as forms of learning activity;

The book contains several methodology issues for which Gabriela Kelemen finds proper solutions. Among these, we would like to recommend the readers:

- Educating speech from an integrated perspective, by presenting some models of curricular integration and relevant applications for the way in which only one integrated activity can fulfil objectives of several experiential fields;
- Presentation and exemplification of certain methods of prevention and removal of speech difficulties at children;

On the whole, the book stands out as a clear and systematic approach that reconstructs the logic of construction and concept derivation, allowing the reader a progressive familiarization with concepts, methods and applications from the field of speech education at pre-school children. Each chapter is organized as a logical succession of ideas and concepts, favouring a fluent reading, with heuristic elements that urge to reflection. Shortly, the book is an useful tool both for students that train to become teachers, and for teachers who are interested in broadening their knowledge in the field of educating speech in pre-school education.

Ultimele apariții editoriale primite la redacție:

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