ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 12, Issue, 11, pp.14735-14741, November, 2020

DOI: https://doi.org/10.24941/ijcr.40113.11.2020

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

ELEMENTARY-SECONDARY TRANSITION STUDENTS' LEARNING STYLES AND SCHOOL PERFORMANCE GRADES CM2-6ÈME AT BINGERVILLE MODERN COLLEGE

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ARTICLE INFO

Article History:
Received 20th August, 2020
Received in revised form
27th September, 2020
Accepted 25th October, 2020
Published online 30th November, 2020

Key Words:
Learning Style, Primary-Secondary Transition, School Performance.

ABSTRACT

The objective of this research, which is part of a correlative approach, is to understand the relationship between learning styles and school performance of students in primary-secondary transition. This study used a sample of eighty (180) students on a learning style questionnaire. As for their academic performance, they were checked using the end-of-term grade matrices. The results obtained, on the one hand, using the student T show that there is no significant difference between students who adopt the visual style and those who adopt the kinesthetic style. On the other hand, we found that students who use the auditory style have higher academic performance than their peers who use the kinesthetic style. And finally, we found that students who adopt the auditory style have higher academic performance than their peers who adopt the visual style. These various results were explained by Stenberg's triarchic theory (1990) and Fleming's learning model (1987), and discussed in the light of previous work.

Citation: ***DJELLE Opely Patrice-Aimé.*** **2020.** "Elementary-Secondary Transition Students' Learning Styles and School Performance Grades CM2-6ème at Bingerville Modern College", *International Journal of Current Research*, 12, (11), 14735-14741.

INTRODUCTION

Success in learning has become the focus of all school concerns. It is a matter of making every effort to ensure that learners achieve qualitative learning. This hastily leads States to adopt educational reforms. Among other things, the readjustment of learning content and the revision of assessment systems. Therefore, the scientific work did not remain on the sidelines of this concern. To this end, Wang (2015) concludes that some strategies such as contact with the speaker, and some learning styles of auditory preference are positively correlated with successful language learning. Furthermore, Rousso, Gauthier and Caron (2018) believe that information is best learned when presented in a format that is compatible with the learner's preferred or dominant sensory modality. In addition, Chaimaa (2019) demonstrates that there are significant statistical differences in the performance of future teachers based on their learning styles. Knoll *et al.* (2017) sought to study a list of 30 word pairs and a list of 30 image pairs with 52 young women. Participants were submitted to the revised version of Richardson's Verbalizer-Visualizer Questionnaire (1977). The results show that participants learn best when the information is presented in a format that is consistent with their learning style. In addition, participants with visual styles score higher on the visual scale relative to the verbal scale. This consistency between self-reported style and Verbalizer-Visualizer Questionnaire scores was not observed in participants who self-reported verbal style. Following a 2.5-minute distraction task, Knoll *et al.* (op.cit.) measured memory performance using an indicia recall test (the first item in the pair was provided). The results showed no significant difference between learning style and presentation format (words; images). However, subjective judgements were significantly correlated with scores obtained on the verbal and visual scales of the Verbalizer–Visualizer Questionnaire. Thus, the verbal scale score was positively correlated with subjective judgments of immediate (immediate) recall of words, while the visual scale score was positively correlated with subjective judgments of immediate recall of images. In summary, the study by Knoll *et al.* (2017) found that learning styles are associated with metacognitive learning judgments, but not with objective learning performance. According to these authors, these metacognitive judgments (which have no predictive value) would be a factor in maintaining the popularity of the concept of learning styles. Husmann & O'Loughlin (2018) asked 426 students enrolled in an undergraduate anatomy course to complete a survey on their study strategies and complete the online version of the Visual Aural Read/ Write Kinesthetic (VARK) Questionnaire (Fleming & Mills, 1992). This instrument is composed of 16 multiple-choice items. Based on the matching hypothesis, if there is a match between sensory preference and study strategies, academic performance (the final grade in anatomy)

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should be higher than in the absence of a match (Husmann & O'Loughlin, 2018). At the very beginning of the semester, respondents received recommendations, from their online results page of the VARK Questionnaire, on study strategies consistent with their dominant sensory style. Surprisingly, despite such recommendations, a majority (67.15%) of participants still adopted study strategies in the anatomy course that did not conform to their preferred modality. More importantly, when there was style-strategy concordance (32.85% of the time), the final grade in the course was not significantly different than in the absence of concordance (the other 67.15% of the time). Furthermore, in the full sample of anatomy students, the most common dominant score on the VARK Questionnaire was K (kinesthetic). However, the final grade in the anatomy course was not correlated with any dominant VARK score. Finally, two specific study strategies, the use of a virtual microscope and the use of class notes to be completed in class, were positively correlated with the final grade of the anatomy course, regardless of the dominant sensory category obtained at VARK. Husmann & O'Loughlin (2018) conclude that adopting study strategies that align with the VAK learning style promotes learning. Chaïmaa (2019) examined the impact of the learning styles of future FLE teachers on their performance in oral comprehension. During the 2014/2015 academic year, 30 future FLE teachers at the University of Alexandria took a listening test to prepare individuals for performance tests (such as DALF) and completed a questionnaire based on the VAK model (Visual, Auditory and Kinesthetic) learning styles of Flaming. The results of the analysis show that of the 30 future FLE teachers, 50% have an auditory style, 40% have a visual style and 10% have a kinesthetic style. Those with an auditory style had the best ratings on the listening test. This appears clearly via the arithmetic mean (5.13). Nevertheless, future teachers with visual style obtained the lowest scores on the test in question. The arithmetic average was 2.75. In order to examine the effect of learning style on student performance on the listening test, variance analysis was calculated. The application of this statistical model indicates that the value of the calculated F exceeds that of the statistical table at the level of 0.05, This shows that there are significant statistical differences in the performance of future teachers according to their learning styles. In addition, a posteriori (post-hoc) comparisons, specifically the Tukey test, point out that these are the significant differences, only, between the performance of future hearing teachers in understanding the oral and that of the visuals in favor of the former.

From the above, we note that the performance of future FLE teachers in oral comprehension is influenced by their learning styles. Indeed, teachers with an auditory style obtained the best grades on the test of listening comprehension, which is not the case with those of visual or kinesthetic styles. This finding is in line with those of Liu (2008), and Bidabadi & Yamat (2012), who point out that the communicative style of learning provides a positive indicator of learners' performance in oral comprehension. El Ghardallou *et al.* (2013) seek to describe the learning styles of medical school students. To this end, a descriptive study of a transversal nature was carried out among five (5) promotions of students of the faculty of medicine during the academic year 2009-2010. Participants (n=856) were submitted to the Learning Styles Inventory of the Multimedia Teaching Laboratory (ISALEM) which evaluates learning styles. Statistical analyses do not show any significant differences by year of study. On the other hand, we do notice a difference by gender and the level of reflection and action scores. Indeed, compared to boys, girls had a higher score for action (33 to 32) and a lower score for reflection (27 to 28.4). Description of student learning style showed that the majority of students (n=314) had a preference for intuitive pragmatic accommodative style), 28% of subjects (n=220) had a methodical pragmatic style (convergent) and 24.2% (n=190) a methodical reflexive style (assimilator). In contrast, only 7.5% (n=59) had a reflexive (divergent) intuitive style. In total, the results show that students at Sousse Medical School mostly use an intuitive-pragmatic (accommodator) style of learning. ; they use intuition to grasp concepts and tend to apply them to new experiments to solve the problem. This profile does not change throughout their medical years, but differs slightly by gender. Contextual theory emphasizes the importance of context, relevant characteristics of the environment in the execution of a complex task. In this perspective, Sternberg sees intelligence as a mental activity directed towards a chosen adaptation to the environment, a selection of the environment or a reorganization of it. In other words, this approach gives rise to three possibilities: the ability of the individual to adapt to his environment, the ability of the individual to adapt the environment to his needs, the ability of the individual to change environment.

Experiential theory, on the other hand, seeks to link an individual's experience in a given situation with their mental problem-solving abilities. In this approach, the interaction between experience and intelligence is broken down into two processes: the ability to automate information processing procedures and the ability to adapt. The former facilitates the acquisition of processes by freeing up other automation processes, which increases the processing speed, while the latter makes use of experience and education. Componental theory attempts to link problem-solving activity to the internal world of the individual, particularly to the mental mechanisms underlying intelligent behaviour. In the context of our study, the context of school learning is similar for all students in that teachers have taken the same training and apply formal curricula pre-established by the Ministry of National Education. In these circumstances, the contextual theory based on the differences in context to explain the inter-individual differences does not seem to us to be very useful. In other words, it could not be used to explain differences between students in the use of problem-solving strategies. That's why we're primarily interested in experiential theory. It specifies the relationship between, on the one hand, intelligence as it manifests itself in the problem situation, and, on the other hand, the contribution of experience. Assessing the cognitive capacities of the individual and identifying the processes he implements in the face of a problem situation requires then to consider not only these processes, but also the levels of experience they address. Thus, scripts and mental schemes apply to behaviours whose production sequence within a situation is already automated, that is to say, for which one already has significant experience. To measure the degree of automation of a resolution behaviour, process or procedure, one could, for example, present tasks to individuals and observe the time

required for solutions to become automatic. On the other hand, we could examine how automation can play a role in the performance of these types of problems. According to Sternberg (1990), selecting a strategy is as important to understanding performance in intelligence tasks as the effectiveness of the strategy itself. Experiential theory focuses on the novelty and automation aspects of the situation that are relevant to the student. The main emphasis is on the importance of prior knowledge which, through the exercise, creates the automations necessary for effective problem solving. Success in learning has become the focus of all school concerns. It is a matter of making every effort to ensure that learners achieve qualitative learning. This hastily leads States to adopt educational reforms. Therefore, the scientific work did not remain on the sidelines of this concern. To this end, Wang (2015) concludes that some strategies such as contact with the speaker, and some learning styles of auditory preference are positively correlated with successful language learning.

Furthermore, Rousso, Gauthier and Caron (2018) believe that information is best learned when presented in a format that is compatible with the learner's preferred or dominant sensory modality. In addition, Chaimaa (2019) demonstrates that there are significant statistical differences in the performance of future teachers based on their learning styles. Fleming's (1987) model of learning styles is based on the main sensory modes of learning : vision, hearing and touch. He is interested in how information is processed by the learner. Fleming's model encompasses four learning styles: visual style, auditory style, reading/writing style, and kinesthetic style. Many designers include reading/writing preference in the visual learning style (Barbe, Swassing, & Milone, 1979). For example, visual, auditory and kinesthetic learning preferences provide valuable information on how people learn, a context for thinking about what teachers can do to interest various learning preferences (Fleming, 1995). As a result, Fleming (1987) will focus solely on the three VAK learning styles: visual style (V), auditory style (A) and kinesthetic style (K). Visual learners are characterized by better memory using vision. They learn best with visual materials such as maps, graphs, diagrams, images, videos, course materials, slide shows, or procedures illustrated in manuals. Thus, colour seems to play a very important role in visual learning. In general, it attracts the attention of visual learners to relevant materials to improve learning.

Auditory learners learn better by listening. They enjoy learning through discussions, presentations, debates and other situations that provide an opportunity to discuss and listen to what others have to say. Furthermore, the oral narration of stories or the creation of verbal analogies plays a very important role in illustrating a specific point during a learning situation. Learners are sensitive to the implied meanings of the tone and pitch of the voice and the throughput of the speaker. Kinesthetic learners learn by moving, performing and touching. They often like to take notes, embellish them with illustrations, diagrams or practical learning situations. Thus, They prefer to scan the material written in the beginning to have a general idea before focusing on the details. In a learning situation, kinesthetic learners enjoy listening to music and often take breaks. To learn a language, they prefer to meet with others to have a conversation. The present study therefore draws on the triarchic theory of Stenberg (1990) and the model of learning styles of Flaming (1987), to understand the school performance of students in school transition according to their learning style. Society attaches great importance to the education of children, not only in order to enable their intellectual development, but also to promote their social development. The actions undertaken by society to achieve these objectives are based on means of training related to the aims of education. To this end, Côte d'Ivoire's major challenge is to promote new skills, which necessarily requires the establishment of an efficient education and learning system. While skills acquisition is the result of multiple economic and socio-political factors, it is generally accepted that the performance of the education and learning system is a determining factor. It must not only provide opportunities for the maximum number of children and young people to go to school, but also that they acquire the knowledge they will need in their adult lives, particularly in the labour market (Glewwe & Kremer, 2006). Since 2011, the Government of Côte d'Ivoire has made considerable efforts to allocate additional budgetary resources to the education sector, since the budget allocated to this sector (in constant value) has increased by 7.5% per year since 2010, more than three times faster than the growth observed during the period 2000-2005. This budgetary effort was used to finance the construction of new classrooms (9291 classes for primary and 3500 for secondary) and the hiring of numerous teachers (19995 and 6167 for primary and secondary respectively).

The Ivorian state spent about ¼ of its budget or almost 5% of its GDP on education (World Bank, 2017). In terms of student enrolment, from 2014 to 2015, the structures of the Ministry of National Education and Technical Education (MENET) welcomed 5,049,496 students in all cycles. As a result, the number of students increased by 7.8% compared to the 2013-2014 school year and previous years. Secondary education rose from 1,377,198 to 1,534,810 pupils, an increase of 11.4%. According to Sillamy (2003), the school allows individuals to develop, in addition to moral qualities, intellectual, physical and artistic qualities. It thus becomes a source of development complementary to the family environment, since it provides individuals with a new framework of experiences and interactions with their peers (Kanga, 2008).

However, to achieve its objectives, the school is subdivided into several stages of education: primary, secondary and tertiary. Following the primary cycle, which is responsible for the social integration of learners by providing them with the knowledge essential to their social life, the secondary cycle continues the education of these learners by supplementing and completing the preparation of these. The European Union is a European Union of Independent States. The aim of this cycle is, firstly, to facilitate the transition from primary school to college by reinforcing the skills acquired at the end of elementary school and, secondly, to introduce pupils to their own disciplines and methods specific to secondary education. In fact, pupils generally enrolled in the sixth grade, experience the transition from primary to secondary school as a break in their pace of life, whether in terms of the size of the school, the occurrence of subjects, the expectations of teachers, the relationship with teachers, and requirements related to educational outcomes. In addition, students must also face different working and learning methods. Students must also

adopt new ways of learning and working in the face of the multiplication of disciplines and teachers who each require work not day by day, but according to a rhythm based on the organization of disciplines in the use of time. Faced with these different findings, we ask ourselves the question: does the style of learning have an influence on the school performance of students in primary-secondary transition?What are the most commonly used learning styles for transitioning students in grades 4-6? What style of learning should we use to guarantee better academic performance to students in school transition?

METHODOLOGY

Research field, population and sample: All social sciences and humanities research focuses on a category of individuals living in a given environment. Knowledge of this entity is necessary for its objectivity. Thus, the purpose of this chapter is to present the field of study, the population covered by this study and the criteria that led to the selection of our sample.

Field of Study: The Modern College of Bingerville is directed since 2012 by Mrs. Djara born Koné Mariam, and operates with 25 Physical classes for 49 Pedagogical classes, which brings it to the double vacation for all students from the 6th to the 3rd. This college is an institution of forty-eight (49) physical classes, for a total of four thousand one hundred twenty-seven students, of which 1,448 (1048) are students in the sixth grade, in twelve (12) classes. The population of this college is supervised by 127 professors divided into different disciplines organized in teaching councils and 57 administrative and supervisory staff.

Population: The study population consists of 1,048 students enrolled in class 6 at the Modern College of Bingerville. The choice of the sixth class remains a concern. It should be noted that the transition to secondary education requires each learner to adapt to the new academic and social realities, as well as to changes in the functioning of the school, such as changes in pedagogy, the evaluation and the subjects taught, the new network of friends, the new relationships with teachers, the new school, new schedules or new rules of school life (Desrosiers, Nanhou, & Belleau, 2016). However, these changes are likely to create some negative effects, such as the breakdown of social ties, the increase in the risk of dropping out of school, the presence of anxiety and less positive attitudes towards school and teaching staff, decreased school performance, lack of interest in school subjects, and increased symptoms of stress and depression. Faced with this situation, learners are obliged to adapt to their new school environment, despite all these influences. Therefore, they are obliged to develop mechanisms, or even strategies or strategies to deal with it. Thus, the continuation of studies will depend in large part on the means that each learner in the sixth class would put in place. It is in this sixth population that we select the number of students who will make up our sample.

Sample: In order to collect information from the study population, the researcher cannot at the same time interview all the people involved in the study. Thus, it uses a representative sample to obtain its information. For the construction of our sample, we will use the reasoned sampling technique. This non-probabilistic sampling technique has the particularity of giving the researcher the latitude to refer to the persons. The technique of sampling by reasoned choice will allow us to build a sample of 200 students, including 91 boys and 89 girls.

Assumptions

General assumption: There is a relationship between learning styles and school performance of students in primary-secondary transition.

Operational Assumptions

HO1: Students who adopt the visual style have higher academic performance than their peers who adopt the kinesthetic style.

HO2: Students who use the auditory style have higher academic performance than their peers who use the kinesthetic style.

HO3: Students who adopt the auditory style have higher school performances than their peers who adopt the visual style.

Data collection instruments and procedures, research methods, data analysis techniques and difficulties encountered: The purpose of this study is to study the impact of learning styles on the academic performance of students in the sixth grade. To conduct such a study, we used a set of instruments. These include the Identification Questionnaire, the Learning Styles Questionnaire, the Interview Guide and the Revealed Notes.

Data Collection Instruments

Identification Questionnaire: The questionnaire is one of the most widely used tools currently in social sciences and humanities research. This frequent use is due to the easy transfer and processing of data from this tool. In this vein, we have developed a questionnaire whose primary purpose is to collect information. In doing so, it tells us which variables could induce bias. And, the subjects are asked about their age, family type, regularity in the school curriculum, their gender and school origin.

Learning Styles Questionnaire: Learning style refers to how a person is programmed to learn most effectively, that is, to adopt a particular learning strategy independently of the specific demands of the learning task. In our particular study, we propose to determine the learning style of students in primary-secondary transition. The choice of the questionnaire was based on the review of the scientific literature. This scale proposed to students in primary secondary transition, consists of twenty-five (25) items. At each item, the respondent is then called upon to respond to statements such as: “When I try to concentrate, I can be”; “I can remember how to spell words”. These different items offer three options for answering topics (A, B or C). Therefore, for each modality of response to the different items, corresponds the style of learning (visual, auditory or kinesthetic. The highest response from V.A.K determines the preferential profile of the student.

Note Matrices: In order to carry out this research, it is important to have information on the subjects selected for our study. To do this, it seems necessary to use the subject's note matrices.

Essentially, these matrices contain all the information concerning our subjects as well as their averages in the different subjects, quarterly and annual. Here it should be noted that these averages are attributed by the teachers at the end of the evaluations. Thus, we consider the averages for the first quarter of the current year. With the presentation of the research instruments completed, we describe the procedure that allowed us to collect the data and we present the statistical tool used before concluding with the difficulties encountered.

Data collection procedure: We first administered the identification questionnaire to all the subjects in the sample. The process was conducted collectively. This was done in the presence of one of the level educators, to help keep quiet. After identifying the subjects, we selected the subjects that meet the criteria defined above. The selected subjects were collectively submitted to the learning styles questionnaire. The questionnaires were administered collectively.

Data analysis methods: The purpose of this study is to relate the learning styles and school performance of students in transition grades 4 to 6. Such an approach is part of a correlational perspective. School performance represents all grades or averages of pupils in the sixth year in the disciplines. These results are therefore continuous quantitative data of the students.

There are also three groups of participants: students with a visual style, students with a kinesthetic style and students with an auditory style. In this case, a parametric test can be used to assess the difference between the averages of the three independent groups, that is to say to compare the averages of pupils of visual style, kinesthetic style and auditory style. In this respect, the Student T is one of the appropriate statistical analysis tests to judge the significance of the differences.

Presentation of results: The results will be presented in two ways. The first axis will focus on highlighting the characteristics of the respondents and the second axis will focus on the assumptions made.

Table 1: Student distribution by style of learning

Learning style	Workforce	Percentage	Valid Percentage	Cumulative Percentage
Visual	59	32,8	32,8	32,8
Auditory	60	33,3	33,3	66,1
Kinetic	61	33,9	33,9	100,0
Total	180	100,0	100,0	

Table 1 shows that the age of students in school transition varies from 10 to 14 years of age and older. Most of the students in our study, 109 students, are 14 years of age and older, followed by 68 students between the ages of 12 and 13. This figure shows that 63% of students are aged 14 and over.

Table 2. Distribution of pupils by age and sex

Age	Number	Percentage	Valid Percentage	Valid Percentage
10-11 years	3	1,7	1,7	1,7
12-13years	68	37,8	37,8	39,4
14 years and over	109	60,6	60,6	100,0
Total		180 100,0	100,0	

In addition, we observe that 35% of students are between 12 and 13 years of age and 2% are between 10 and 11 years of age.

Distribution of students by age and sex: Table 2 shows the distribution of pupils in the sixth grade between the ages of 10 and 14 and over. 109 students of which 48 girls and 61 boys are 14 years and older. Such conclusions can be seen in the figure below.

Student Distribution by Learning Style

Table 3. Student Distribution by Learning Style

Learning style	Workforce	Percentage	Valid Percentage	Cumulative Percentage
Visual	59	32,8	32,8	32,8
Auditory	60	33,3	33,3	66,1
Kinetic	61	33,9	33,9	100,0
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Total	180	100,0	100,0	

Table 3 presents the learning style used by transitioning students. It is found that 61 or 33.9% of students use the kinesthetic style while 32.8% use the visual style of learning. The figure below allows us to better observe these different learning styles We note that the majority of students use the kinesthetic style or 61 students in our sample.

Verification of Operational Assumptions

Operational Assumption 1: Students who adopt the visual style have higher academic performance than their peers who adopt the kinesthetic style

Table 5. Comparison of School Performance by Student Visual and Kinesthetic Learning Style

Learning Style		Workforce	Average	Standard deviation	Average standard error
	Visual	59	10,4271	1,58169	,20592
	Kinetic	61	10,6811	1,58248	,20262

Statistical analysis indicates that the calculated t (t=0.879) is less than the theoretical t read in the table; not significant at 118 ddl.

Table 6. Comparison of school performance by student's auditory and kinesthetic learning style

Learning Style		Workforce	Average	Standard deviation
	Auditory	60	12,0752	1,28955
	Kinetic	61	10,6811	1,58248

There is therefore no link between learning styles and school performance. It cannot be concluded that students developing the visual style of learning have higher academic performance than their counterparts developing the kinesthetic style of learning. The hypothesis is invalidated

Operational hypothesis 2: Students who use the auditory style have higher academic performance than their peers who use the kinesthetic style

Table 7. Comparison of Student Visual and Kinesthetic Learning Styles in School Performance

Learning Style		Workforce	Average	Standard deviation	Average standard error
	Visual	59	10,4271	1,58169	,20592
	Auditory	60	12,0752	1,28955	,16648

Statistical analysis indicates that the calculated t (t=5.307) is greater than the theoretical t read in the table; significant at 119 ddl at the probability threshold 0.05. So there is a link between learning styles and school performance. It can be concluded that students developing a learning auditory style have higher academic performance than their counterparts developing a learning kinesthetic style. The hypothesis is therefore confirmed.

Operational hypothesis 3: Students who adopt the auditory style have higher academic performance than their peers who adopt the visual style: Statistical analysis indicates that the calculated t (t=6,234) is greater than the theoretical t read in the table; significant at 117 ddl and the probability threshold 0.05. So there is a link between learning styles and school performance. It can be concluded that students developing a learning auditory style have higher academic performance than their counterparts developing a learning visual style. The hypothesis is therefore confirmed.

Qualitative Analysis: The hypothesis check shows that students with a learning style of auditory style have higher academic performance than their counterparts who use visual and kinesthetic learning styles. This situation could be explained by the fact that auditory students would develop a great deal of attention when giving different classes in class compared to visual and kinesthetic students. Indeed, auditory-style students remain very attentive in the classroom and have their eyes focused only on the teacher when he gives the classes.

They tend to avoid all kinds of unnecessary chatter and remain focused on the courses provided. This has allowed them to better understand the different teachings taught, to be armed to face the various assessments and to obtain better academic performance. This is what allows them to deal with the many situations encountered in their school environment.Unlike auditory students, visual and kinesthetic students would be more distracted during classroom instruction.

A bother, they pay attention to less important events during classes and consequently produce poor school performance. They would have preferred to carry out experiments or to be confronted with concrete situations in order to better record and render, during the evaluations, the lessons taught.

DISCUSSION

The purpose of this study is to understand the relationship between learning styles and school performance of students in primary-secondary transition at Bingerville Modern College.Specifically, the aim is to identify the learning style most used by pupils in the sixth grade, and to examine the effect of each learning style on their academic performance. As a result of our field investigations, we have produced results that largely confirm our assumptions. The first result shows that students who develop the visual style of learning and their counterparts who adopt the kinesthetic style of learning equally produce the same school performance. The second result shows that students who adopt a learning auditory style have higher academic performance than their peers who develop a learning kinesthetic style. As for the third result, it shows that students who develop an auditory style of learning have higher academic performances than their counterparts who develop a visual style of learning. From all these results, it appears that there is in part a relationship between learning style and school performance among pupils in primary-secondary transition, especially those at the Collège Moderne de Bingerville. It is now important to compare these results with those of previous work from the same perspective. The non-significant results we have achieved relate to the results of La Garanderie (1982), which suggests that to be more successful in school, students should cultivate both visual and auditory mental images. The joint presentation of visual and auditory material must encourage, in the student, a mental management favorable to the evocation of mental representations in both modalities. However, positively correlated results are obtained and are consistent with those of some studies. Thus, the study by Chaïmaa (2019) shows that teachers with an auditory style obtained the highest scores on the oral comprehension test, which is not the case with those with visual or kinesthetic styles.

These findings are consistent with those of Liu (2008), and Bidabadi & Yamat (2012), who note that the communicative style of learning provides a positive indicator of learners' performance in oral comprehension. We can also draw a link between this aspect of our results and that of Bourgeois (2003). According to this author, the visual style is dominant on the auditory and kinesthetic. In addition, Wang (2015), in assessing the impact of learning styles on foreign language learning, shows that auditory learning style is positively correlated with successful language learning. In short, we consider that there is in part a relationship between the learning style and the academic performance of students in school-college transition. Students who use the visual style of learning do not differ in the academic performance of their peers in the kinesthetic style of learning. However, students who adopt the auditory style of learning have higher academic performance than their counterparts who develop the kinesthetic style of learning.

Similarly, students who have the auditory learning style have higher academic performance than their peers who use the visual learning style. This situation points to the fact that learners in primary-secondary transition use the auditory style of learning more, which portrays the learners' academic performance. Knowledge of student learning styles can be seen as an important element in student academic success.

Conclusion

The present work aims to establish a relationship between learning styles and school performance among students in transition CM2- 6th of the Modern College of Bingerville. To do this, we consulted the literature to determine whether there is a link between these two variables. It was found that the learning styles of students are related to their academic outcomes. That is why we have put in place a methodology to verify the existence of this relationship among our subjects. To measure the learning styles of the students in our sample, we submitted a learning style questionnaire designed for the study. As for the averages, they were collected, from the computer department of the high school, from the matrices of the notes of the first quarter. The results we have achieved on the one hand, thanks to statistical processing (student T), show that there is no significant difference between students who adopt the visual style and students who adopt the kinesthetic style.On the other hand, we found that students who use the auditory style have higher academic performance than their peers who use the kinesthetic style. And finally, we found that students who adopt the auditory style have higher academic performance than their peers who adopt the visual style. The explanation of these different results was based on the models of triarchic theory of Stenberg (1990) and the learning model of Fleming (1987) to give them psychological significance. Such a study will enable guidance inspectors to know the most appropriate learning style and implement a individualized support to prevent learning difficulties among students in primary-secondary transition.

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