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Video Games and School Performances of Dakar High School Students

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Abstract

The triptych (Smartphones, Video games, adolescents) has imposed itself on the collective consciousness in the form of questioning to the point of becoming a social phenomenon. It thus raises concerns about the uses that adolescents make of it and the effects on their academic performance, which we proposed to study among middle school students from the Dakar academy inspection. Where appropriate, we used mixed methods with the collection techniques of questionnaire survey, semi-structured interviews respectively with middle school students, adults (parents, supervisors, teachers, etc.), participant observation and literature review. Concretely, before accessibility to video games, the middle school students were more idle and well-behaved, watched a lot of TV, played with their brothers and sisters or did household chores. The majority of young people had good, very good or excellent conduct and their averages were fair, fairly good or good. With access to a diverse digital environment, middle school students have passionately turned to video games. As a result, their learning time, concentration and submission to parental injunctions have declined significantly. This situation negatively affected their academic performance and encouraged bad behavior.

Keywords

Digital Revolution, Video Games, Middle School Student, Education, Academic Performance

1. Introduction

There would be a natural link between the young person (child or adolescent) and play. For J. Château [1], "The child is a being who plays and nothing else". More precisely, we can say that playful activity is a necessary element for one's balance and overall, psychological, cognitive, emotional and social development.

It is certainly for this reason that the United Nations Convention on the Rights of the Child [2] highlights the importance of play in the life of young people and states the seventh principle in these terms: "The child must have every opportunity to engage in recreational activities, which must be oriented towards educational ends; society and public authorities must strive to promote the enjoyment of this right." But beyond these rights and development aspects relating to playful activity, the provision of pleasure is one of the fundamental characteristics of play. This is certainly the reason why, M.J. Ellis [3], after having presented "the naturalness of play in children as a response of the organism to their need to maintain this awareness and bring them to an optimal level", added: "this pleasure associated with play draws its source from certain characteristics specific to the situation playful: novelty, uncertainty and challenge which must be considered surmountable by the child. Attracted by novelty, the child discovers, through play, the pleasure of braving uncertainty and taking up the challenge. In the game, anything can happen since nothing is settled in advance; curiosity is aroused and leads the child towards the discovery of the intrinsic pleasure of play." In short, "play allows the child to make sense of a situation and to deepen their understanding of it." and at the same time builds oneself while building one's know-how, one's intelligence, one's sociability, one's spirit of challenge and "one's self-esteem". M. Lewis [4], P. Kergomard [5] seem to summarize the relationship between the child and play in these terms: "Play is the child's work, it is his job, it is his life."

Given these scientifically proven benefits of playful activity in several disciplines (psychology, biology, sociology, etc.), UNESCO [2] favored the creation of an international platform for the promotion and development of games and traditional sports (JST) but also for the achievement of assigned objectives, to encourage research, the cataloging of recreational diversity, the promotion of games in their cultural contexts and their development thanks to new tools linked to IT (websites, publication,) for their accessibility to all. This bet now seems to have succeeded. However, there is reason to question, in view of the passion aroused by these games shared via technological tools (computers, smartphones, tablets, internet, websites, etc.), about their uses which are essentially for children playful. These tools and these video games have today finished demonstrating their absorbing nature to the point that we would be led to think that all the activities of young people (children and adolescents) would be reduced to these video games played all day long and sometimes favored by children to the detriment of lessons to be learned. Should the naturalness of playful activity and its benefits for children constitute a barrier to education in its formal, non-formal and informal forms? This situation raises the problem of taking into account the educational uses of fun video activities which are in fashion.

Furthermore, it is clear that after the rise of Web 2.0 during the 2000s, of which social networks like Facebook and Twitter became the emblem, then with the meteoric rise of mobile terminals and tablets (without forgetting the current

boom in connected objects), the conquest of the world population has become more obvious. The "digital revolution" also called "internet revolution" or "digital revolution" in this regard designates a profound upheaval caused by the development of digital techniques. It is characterized by the development of artificial intelligence used today in almost all areas of life (economy, medicine, finance, education, etc.). This is how the production and sharing of hundreds of thousands of games in the form of videos are offered through these terminals free of charge or commercially. Several traditional games from all corners of the world are put online and therefore accessible to all those who connect and who are looking for them. It is rare to see among adolescents, middle school students who have never connected by concluding his study on the playful use of these terminals and video games among children and adolescents. M. Lejoyeux [6], noted: "those who are connected all make the same observation: once they started using a computer, a tablet or smartphones, they could no longer do without it. They discover new uses and are increasingly dependent on them. The Internet offers them an impression (or an illusion depending on the case) of omnipotence and ubiquity. However, two years earlier, W. Lowenstein [7] wondered about "these new types of dependencies that govern us and how to free ourselves from them to become independent again?". If going back seems difficult, even impossible, it is more so for adolescents who are at "the age of developing independence, experimentation, identity concerns and risk-taking characterizing puberty or the transition from childhood to adolescence, from the family circle to the circle of peers (distance from adults), from primary to secondary school and, towards the end of adolescence, preparation for the transition to adult life (…) It is the childhood of maturity and the maturity of childhood." The "me" and its expression in the sense of self-identification with the adult become very strong and are transposed even into playful activity" P. Jeammet [8]. Electronic tools and video games promoting fiction, dreams, domination on the sporting, musical, emotional, sexual levels, identification with a hero or a star, etc. seem to fascinate them to the point of leading them to dependence. Therefore, it seemed logical to us to question the impact of the use of computer terminals for video games on the behavior and academic performance of young middle school students from the Dakar academy inspection. In other words, this study aimed to compare and analyze the attitudes and academic results of these young people before and after months of using tablets and smartphones. If necessary, we propose to present the methodology and results of the work before discussing them.

2. Methodology

Our study is carried out in the capital and mainly in the 37 Middle Education Colleges (CEM) of the Dakar Academy Inspectorate. These establishments are unevenly distributed across four Education and Training Inspectorates (IEF) that make up the academy. To collect as much information as possible in order to better understand the impact of video games on academic performance, we

chose mixed methods (quantitative and qualitative) with semi-directive interviews with 7 parents of students, 10 as collection techniques. Teachers and 5 general supervisors chosen at random, documentary analysis (grade registers and minutes of teachers' councils) and the questionnaire survey with middle school students generally aged 12 to 15 years old. Given the high number of the latter, we carried out sampling by quotas of $1/100^{th}$ to guarantee fair representation of all establishments. This is how, out of a total of 24,992 adolescents, we selected 250 to investigate. However, only 196 responded and returned the questionnaire. These are selected according to three criteria:

- They did not have these computer terminals 1 or 2 years at most before the survey;
- They have been using smartphones, tablets, etc. for at least 8 months. The choice of this criterion is not accidental. This period covers the school year from October 2021 to May 2022. Measuring the impact of the use of these devices depends to a large extent on it;
- These students have actually completed at least the compositions of the first semester.

The processing of qualitative data required the combination of content analyses, thematic data collected followed by interpretations. For quantitative data, statistical analysis was favored. They made it possible to compare, using tables and graphs, the situations before and after the use of computer terminals for video games in terms of the behavior of these young people in college and their academic results.

3. Results

Dakar's middle school students are immersed in a digital environment made up of different devices (smartphones, tablets, game consoles, etc.) with very diverse characteristics in terms of their capacities and performances. The types of connections made available to parents are ADSL only and ADSL associated with the 4G chip or the illimix package. In addition, on the web (Internet), video games are very numerous, categorized and mostly accessible. Several aspects of social, military, etc. life are reproduced there in the form of video games. We are interested in those preferred by young middle school students, in the changes in behavior and academic results influenced by these virtual fun activities.

3.1. College Students' Preferences for Video Games

With the availability of small screens (smartphones, tablets, etc.) and the permanent accessibility of the internet connection, the majority of college students indulge in CAR PARKING, GTA (Grand Theft Auto), FIFA, FORNITE, GARENA FREE FIRE, etc. The trends in playing these video games are apparent in **Table 1**.

The fun activities of young college students via small screens connected thanks

Table 1. Distribution of middle school students according to preferences.

Favorite video gamessex	Number		Total	%
	G	F		
CAR PARKING	36	29	65	**26 %**
GTA (Grand Theft Auto)	22	28	50	**20 %**
FIFA	28	17	45	**18 %**
FORTNITE	19	24	43	**17 %**
GARENA FREE FIRE	16	26	42	**17 %**
Others	01	04	05	02%
Total	122	128	250	100 %

Source: Papa Mamadou Gaye surveys, March, April, May, June and July 2022.

to the availability of ADSL networks and other means of access to the web, are quite varied. Precisely and in view of their choices mentioned on the questionnaires, the video game called "Car parking" is the most used. There are, in fact, 65 young adolescents from the middle cycle who play it as their main game. They represent in relative value 26% of the sample. More boys make this video game their favorite distraction because they are 36/65 compared to 29/65 girls. Informed of this situation, several parents confirm: "It's normal, overall, they play several video games but these vehicle manipulations fascinate them. They are often caught playing these games." As if to reinforce this trend, supervisors and teachers say: "We have sometimes expelled students because of the use of these small screens during lessons. Most often, the device is torn off and given to the general supervisor. Out of 10 devices confiscated and subsequently given to the parents summoned for this purpose, we noted that the 4 were in 'car parking' at the time of the surprise recovery of the device." This situation reveals the place of this video game in the fun activities of young middle school students.

In second place we have the game "GTA (Grand Theft Auto)" which totals a score of 20% of college students' gaming preferences. In absolute value, this percentage represents 50 young people out of the 250 surveyed. This group which puts on the front line "GTA (Grand Theft Auto)" as a favorite gaming preference is unevenly distributed between boys, numbering 22, and girls who number 28 in total. The latter are more numerous. This trend is also reinforced by parents whose descriptive comments about this playful occupation of middle school students are reminiscent of this video game. They say "our children manipulate characters in cities with scenes of robberies, crimes and chases etc. When they are there, it is very difficult to direct them towards something else to the point that we ask ourselves questions about the interest of this game which they describe with great passion." The choice of these 50 students and the assertions of the parents is an important indicator of the distraction of young people because of this video game.

The video game "FIFA" is positioned in third place among the fun and virtual preferences of middle school students, of whom a total of 45 have chosen it as their favorite game. They represent in relative value 18% of the sample. In this group, there are more boys with a number of 28 compared to 17 girls. In fact,

this score seems logical in the sense that these are sports video games, particularly football, which excite boys more than girls. Some parents confirm their tendencies by accepting the position of this game. Others think that "FIFA video games" should even be in first position. The latter essentially argue that football in all its forms drives young people crazy. We even play with them sometimes (…). On closer inspection, parents in this position only have boys who are members of the sample at home.

Finally, the video games "FORNITE" and "GARENA FREE FIRE" mobilize 43 and 42 young college students respectively and more frequently. Each of these two groups represents in relative value 17% of adolescents with a tendency towards feminization because more girls check them as their first preferences.

In short, young people's virtual ludo preferences go towards: CAR PARKING or parking challenges, GTA (Grand Theft Auto) or action-adventure with weapons and violence, FIFA (football matches with representation of very famous players), FORTNITE (game battle with guns against enemies and GARENA FREE FIRE (game with weapon to eliminate enemies). The manipulations made by the young people themselves are digital. These video games are very absorbing because it is the player who manipulates the characters and capitalizes the gains. Does this captivating and prolonged occupation affect the behavior of college students who devote themselves to it without reservation?

3.2. At School, the Tendency towards Bad Behavior

This involves, in a comparative manner, analyzing the behavior of students at school based on conduct notes by comparing data from situations before to those after. Where applicable, Table 2 allows us to understand the evolution of young people's driving scores.

Table 2. Comparison of the conduct notes of middle school students in situations before and after use of IT.

Students conduct grade classes. "Previous situation"	Number	%	%	Effective	Students conduct grade classes. "Situation according to"
From 0 to 4.99 (Very bad behavior)	0	0%	0%	00	From 0 to 4.99 (Very bad behavior)
From 5 to 9.99 (Misbehavior)	0	0%	2%	04	From 5 to 9.99 (misbehavior)
From 10 to 11.99 (Fair, acceptable driving)	2	1%	7%	16	From 10 to 11.99 (Fair, acceptable driving)
From 12 to 13.99 (Pretty good driving)	27	11%	15%	38	From 12 to 13.99 (Pretty good driving)
From 14 to 15.99 (Good behavior)	96	38%	40%	101	From 14 to 15.99 (Good behavior)
From 16 to 17.99 (Very good behavior)	99	40%	35%	88	From 16 to 17.99 (Very good behavior)
From 18 to 20 (Excellent conduct)	26	10%	1%	3	From 18 to 20 (Excellent conduct)
Total	250	100%	100%	250	Total

Source: Papa Mamadou Gaye surveys, March, April, May, June and July 2022.

After a few months of using tablets, mobile phones, game consoles, etc., schoolchildren's driving scores dropped significantly. In fact, the number of schoolchildren who obtained the "excellent conduct" rating went from 26/250 to 3/250. Those who find themselves in the grade interval with limits 18 and 20 are only 3 compared to 26 in the previous situation. As a result, the percentage they represent has dropped significantly. Being 10% in the previous situation, the rate is now only 1% of schoolchildren and raises concerns. Without hesitation, the majority of parents and supervisors have indexed small connectable screens. The situation for this class of notes is therefore alarming. It is more so for unfavorable mentions. On the one hand, sub-averages in driving have never been recorded in the previous situation, although at the time of the survey 4 schoolchildren were there, or 2% of the sample. On the other hand, in the mention "fair and acceptable conduct" attesting to a score between 10 and 11.99, the number of schoolchildren increased from 2/250 to 16/250 representing respectively the percentages of 1 % and 7%. In the same vein, averages between 12 and 13.99 in driving are not well appreciated by the players. The number of adolescents with grades in this range increased by 11 individuals. In other words, the 27/250, or 11% of the sample, were reinforced to give 38 in the following situation, or 15% in relative value. Thus, the mention "fairly good conduct" has improved to the detriment of favorable assessments. The latter in which we find students who have averages between 14/20 and 17.99/20, the number increased by 5 students for the mention "good behavior" and decreased by 11 individuals for the appreciation "very good conduct". This is evidenced by the difference in percentages observed and the gap of 3% in favor of the situation before and to the detriment of that after.

This table, which shows an increasingly unfavorable trend for studies, was exposed to adults, that is to say teachers, supervisors and parents who have mainly indexed the small connectable screens made available to them in recent months.

In short, in the situation before, driving scores below 10 are non-existent. From 12, there is a strong progression up to a score of 17.99 and around ten middle school students who are between 18 and 20. After using IT, scores below 10 appear. Those between 10 and 11.99 have increased while those between 18 and 20 have fallen sharply as have scores between 12 and 13.99.

3.3. The Drop in Academic Performance of Middle School Students after Their Access to Video Games

On a purely academic level, the evolution of student performance is measured based on the comparison of averages in situations before and after use of smartphones, tablets, etc. It is highlighted in Table 3:

Table 3. Comparison of annual averages of middle school students in situations before and after IT use.

The average classes of students. "Previous situation (2020~2021)"	Number	%	%	Effective	Students' average classes. "Situation after (2021~2022)"
From 0 to 4.99 (Very weak)	3	1%	5%	13	From 0 to 4.99 (Very weak)

Continued

From 5 to 9.99 (Weak)	31	12%	18%	45	From 5 to 9.99 (Weak)
From 10 to 11.99 (Passable)	79	32%	35%	88	From 10 to 11.99 (Passable)
From 12 to 13.99 (Pretty good)	87	35%	29%	73	From 12 to 13.99 (Pretty good)
From 14 to 15.99 (GOOD)	44	18%	12%	30	From 14 to 15.99 (GOOD)
From 16 to 17.99 (Alright)	06	2%	1%	1	From 16 to 17.99 (Alright)
From 18 to 20 (Excellent)	0	0%	0%	0	From 18 to 20 (Excellent)
Total	250	100%	100%	250	Total

Source: Papa Mamadou Gaye surveys, March, April, May, June and July 2022.

After schoolchildren used computer terminals, the averages of several students dropped. The increase in the number of students in the lower averages attests to this quite eloquently. Indeed, the number of below-average students has increased considerably, from 34, or 13%, to 58, or 23% of schoolchildren. This situation was presented to the teachers who, without hesitation, indexed the use of computer terminals by schoolchildren in these terms: "At a time when we expected the improvement in the academic performance of middle school students, we find ourselves in a situation drop in level. The only thing that has changed and become very visible is that these students all have phones or tablets and they are glued to these devices all the time. In classes, almost every lesson, even with the injunctions not to turn them on in class, they use them in secret. It is now rare for a lesson to be completed until the end without confiscating a student device." (Teachers) And as if to confirm the teachers' words, the parents of students express their dismay by emphasizing the uses of the computer terminals that they themselves have made available to their children to motivate them. Disappointed upon reading this table, they say: "These kids deceived us. We have actually observed that they are still focused on these phones and tablets. But they always told us that they learn and do research with these computer terminals while they are doing other things. They spend all their time playing video games or chatting on social networks." (Parents of students)

In addition, the number of passable grades has also increased. In fact, these are students who have between 10/20 and 11.99/20. Their number increased from 79/250 (32%) in the situation before to 88/250 (35%) in the situation after use of computer terminals. However, this desirable increase in the direction of migration from sub-averages to fair grade did not occur because the averages rated as low and very low also increased. Consequently, it is obviously the numbers of fairly good, good and very good averages that will decrease. Indeed, the number of adolescents whose averages are considered "fairly good", that is to say between 12/20 and 13.99/20, has decreased in the situation according to 14 individuals leading to a percentage which fell from 35% to 29%. Almost the same drop is observed for

the "good" rating because, there too, the number of averages from the previous situation has fallen by 14 individuals. This is how the number which went from 44/250 to 30/250 in the following situation, led to a drop in the percentage which is now 12% instead of 18% in the previous situation.

Finally, in the "very good" category, there were 6 students who had averages in the range (16 - 17.99), or in relative value 2% of the young people surveyed. In the following situation, there is only one student left. As with the observation of increases in numbers in the "low" and "very low" categories, teachers and parents tried to determine the causes. For groups of adults, the uses of computer terminals are indexed first. In the recommendations appearing in the minutes of class councils, this sentence often came up in substance: "Suggest to parents of students and/or guardians to control the use of mobile phones and tablets in homes and to leave them at home when they come to school unless the teacher asks. If necessary, they will be informed by SMS, WhatsApp message or telephone call" (Teachers, Class Council Minutes Extracts). It should be noted that among teachers, opinions are divided between those who defend the educational use of these devices and those who are against it. The first argue that "it is easier to teach with these connected devices because in the WhatsApp group of each class, you can post an exercise at any time, allowing students to do research in and out of class, to propose solutions everyone receives at the same time to confront what they have done and correct it. They evaluate themselves." The others focus on "the ages of adolescents, the uses of computer terminals much more oriented towards distraction, that is to say video games, uncensored social networks and what they convey as libertarian programs and contrary to the values of Senegalese society." In all cases, the observation of the use of computer terminals and the regression of averages are obvious realities. Clearly, college students had the best grades before their parents provided them with cell phones, tablets, etc. The following graph further highlights the regression.

In short, the number of middle school students finding themselves in the sub-average category has increased considerably. Also, the drop in student numbers in the "fairly good", "good" and "very good" grades after they had used computer terminals for at least eight months compared to the situation in before attests to the negative impact of the use of these devices on the academic performance of middle school students who use them.

4. Discussion

The causes of the meteoric rise of video games are linked to "the significant improvement in colorimetry, studio lighting, optics, digital compression, video camera operation, charging devices coupled and features allowing updates to new standard and high definition video recording formats" P. Bellaïche [9]. The assembly of all these elements in computer terminals is described as "contemporary art" F. Perfect [10] whose "simplified and guided design allows the inexpert to create their video from A to Z like a pro" O. Cotte [11]. In short, "video offers

the possibility of playing concretely with the image", S. Tisseron [12]. Since the 90s and 2000s, millions of scenarios symbolically conveying the realities of everyday life and involving the players and actors have been offered to all ages. Particularly, "proactive and reactive adolescents with behaviors considered antisocial and marked with aggression, experience their moments of puberty crisis and demand their freedom to compare themselves to adults" J. Archer [13]. Indeed, "the developing brain and the release of certain hormones can thus provoke strong reactions, which often lead the adolescent to be defensive when a teacher or an adult representing a form of authority addresses him or her make a reproach" R. Cloutier and S. Drapeau as [14]; A. Mears [15].

In addition, "the structure and school environment in secondary school seem inconsistent with the needs of today's adolescents" A. Wigfield *et al.* [16]: "the adolescent needs to feel competent and autonomous, whereas at school, the decision-making possibilities offered to him are rather limited" (M.T. Wang and J.S. Eccles as [17]. Thus, "upon entering secondary school, students begin to refine their social skills, develop their autonomy, form an identity and transform their vision of family, friends and loves; they also become more sexually mature" S.W. Olds and D.E. Papalia [18]. "It is a period of great change, but also a period of "risk", since the development of identity, in particular, fragile self-esteem, and the personal interpretation that each person makes of the changes that they lives, can lead some adolescents to develop depressive symptoms or psychological distress, suicidal thoughts, behavioral disorders or even eating disorders" E. Domagale-Zysk [19]; S.W. Olds and D.E. Papalia [20]. In fact, "these young people seem, (…) tormented by the physiological revolution of their genital maturation and the uncertainty of their future adult role, hence their construction of a subculture with an identity construction, which appears definitive instead to be temporary or in fact initial" E. H. Erikson [21]. This is how this modern world flooded with accessible and absorbing computer terminals and video games creates, for middle school students in particular, favorable conditions for passionate virtual playful reorientation. It must also be emphasized that there are numerous factors for academic underperformance and that video games are only a visible phenomenon of family "cultural capital" in the sense of P. Bourdieu [22].

In short, on the one hand, the literature on ICT and video games and, on the other hand, studies on adolescence in their relationships with games responding to their desires, have been the subject of much writing. However, the correlations between the uses that middle school students make of it and their academic performance translated in terms of average are not, to our knowledge, sufficiently explored by the authors. This is how this work constitutes a contribution to this specific scientific project.

Furthermore, on a methodological level, despite the desire to cast a wide net with the use of mixed methods, only 196 Dakarois middle school students ($1/100^{th}$ of middle school students), 7 parents, 10 teachers and 5 general supervisors were interviewed. Consequently, in each of these groups of respondents,

the positions of the vast majority are not taken into account. This situation leads to the relativization of the results. Because opposing assertions are left stranded because their authors did not appear in the list of individuals to be questioned. In the opinion of B. Jourdan [23] "it is necessary to take into account the divergences, to increasingly multiply the elements of a situation in order to create the conditions for a positive controversy on the validity results".

5. Conclusion

In short, the students of the Dakar academy inspectorate use the computer terminals, particularly the smartphones and tablets made available to them, to play video games. Their preferences are multiple. The five most common virtual ludo activities in their repertoires and which they play with passion are CAR PARKING which is a challenge of parking a vehicle between other cars, GTA (Grand Theft Auto) characterized by adventures and violent actions with the use of firearms, the game FIFA which boils down to football matches pitting representations of great football figures against each other, FORTNITE which consists of a battle between rival camps armed with rifles and where the Final victory is won by the one who has eliminated or killed his opponents and, GARENA FREE FIRE which is also a gun game between enemies, each seeking to eliminate the other. However, it is not a question of observing individuals in action making young people passive, but of participating in games through digital manipulations made from computer terminals in which these video games are downloaded or played directly thanks to the connection to internet available and accessible for these teenage college students. Thus, as players likely to win or lose games, young people from Dakar are highly absorbed. This raises the questions of edutainment and virtual content, of the imitation of characters qualified as heroes and whose actions and/or moralities are in contradiction with socially validated norms. In all cases, the attitudes and behaviors of these adolescents after several months of using computer terminals for video games deteriorated considerably. This is evidenced by the drops in driving scores compared to the situation before. In addition, in terms of studies, video games have contributed to a deficit in individual learning time and the distraction of residents of the Dakar academy inspection colleges. As a result, academic performance as reflected by the averages obtained in the compositions fell.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Jean, C. (1967) Real and Imaginary in Children's Play. Editions du Scarabée.

[2] (2006) UNESCO. https://www.uil.unesco.org/fr

[3] Ellis Michael, J. (1973) Why People Play. Prentice-Hall.

[4] Lewis, M. (1993) The Lexical Approach. Language Teaching Publications.

[5] Pauline, K. (1979) Illustrious Children's Gallery. https://gallica.bnf.fr/ark:/12148/bpt6k9669339m.r

[6] Michel, L. (2007) From Pleasure to Dependence. Editions de la Martinière.

[7] William, L. (2005) These Dependencies That Govern Us: How to Free Ourselves from Them? Calmann-Lévy Edition.

[8] Philippe, J. (2010) Evolution of Problems during Adolescence: The Emergence of Dependence and Its Adjustments, Rueil-Malmaison. Doin Editions.

[9] Philippe, B. (2015) The Secrets of the Video Image: Colorimetry, Lighting, Optics, Camera, Video Signal, Digital Compression, Recording Formats, Image Formats. Editions Eyrolles.

[10] Françoise, P. (2001) Video, Contemporary Art. Éditions du Regard.

[11] Olivier, C. (2007) Video from A to Z: Make Your Films Like a Pro! Ecuelles, Know Ware E.U.R.L, Coll. "*Micro Experience Competence: The Pleasure of Learning*", N° 58, 95-103.

[12] Serge, T. (1998) Is There a Pilot in the Image? Editions Flammarion.

[13] John, A. (2006) Cross-Cultural Differences in Physical Aggression between Partners: A Social Role Analysis. *Personality and Psychology Review*, **10**, 133-153. https://doi.org/10.1207/s15327957pspr1002_3

[14] Richard, C. and Sylvie, D. (2015) Psychology of Adolescence. Editions Chenelière.

[15] Mears Art (2012) Interviews for Research in Education and the Social Sciences: The Bridging Approach, Report.

[16] Wigfield, A., Byrnes, J.P. and Eccles, J.S. (2006) Development during Early and Middle Adolescence. In: Alexander, P.A. and Winne, P.H., Eds., *Handbook of Educational Psychology*, Lawrence Erlbaum Associates Publishers, 87-113.

[17] Wang, M.T. and Eccles Jacquelynne, S. (2012) Adolescent Behavioral, Emotional, and Cognitive Engagement Trajectories in School and Their Differential Relations to Educational Success. *Journal of Research on Adolescence*, **22**, 31-39. https://doi.org/10.1111/j.1532-7795.2011.00753.x

[18] Olds Sally, W. and Papalia, D.E. (2005) The Development of the Person. Études vivants.

[19] Domagala-Zysk, E. (2006) The Significance of Adolescents' Relationships with Significant Others and School Failure. *Journal School Psychology International*, **27**, 232-247. https://doi.org/10.1177/0143034306064550

[20] Wendkos, O.S. and Papalia Diane, E. (2005) Psychology of Human Development. Editions Saint-Laurent.

[21] Homburger, E.E. (1982) Childhood and Society. 7th Edition, Delachaux and Niestlé.

[22] Pierre, B. and Passeron, J.C. (1970) La Reproduction: Elements of a Theory of the Teaching System. Editions de Minuit.

[23] Baudoin, J. (1998) Scientific Impostures. Editions La Découverte/Alliages.