






Digital natives: Online audiovisual content consumption, creation and dissemination

Nativos digitales: Consumo, creación y difusión de contenidos audiovisuales online

-  Dr. Ainhoa Fernández-de-Arroyabe-Olaortua is Assistant Professor in the Department of Audiovisual Communication and Advertising at the University of the Basque Country in Bilbao (Spain) (ainhoa.fernandezde-arroyabe@ehu.eus) (<https://orcid.org/0000-0002-5565-7371>)
-  Dr. Iñaki Lazkano-Arrillaga is Associate Professor in the Department of Journalism II at the University of the Basque Country in Bilbao (Spain) (inaki.lazkano@ehu.eus) (<https://orcid.org/0000-0001-6473-5290>)
-  Leyre Eguskiza-Sesumaga is Researcher in Training in the Department of Journalism II at the University of the Basque Country in Bilbao (Spain) (leyre.eguskiza@ehu.eus) (<https://orcid.org/0000-0002-0308-2545>)

ABSTRACT

Teenagers inhabit a virtual universe with their own model of entertainment, learning and communication. This research work defines the consumption, creation and dissemination patterns of online audiovisual content young students of Guipuzcoa have acquired in the fields of leisure and complementary information resources for school use, attending to three different variables: gender, grade (age) and type of educational institution (public or private). The research methodology focuses on a self-administered questionnaire filled out by 2,426 adolescents of secondary school (12 to 16 years old). The sample consists of a random selection of 120 student groups, which are distributed in 60 schools and 30 groups each course. The results verify the existence of monolithic and opposed male/female patterns in the way young people consume, create and diffuse leisure content. Video games are the central backbone of male consumption and creation, as long as girls prefer to take pictures and videos of themselves using smartphones and to share them on social networks. These practices repeat gender stereotypes, transforming the education in equality into a relevant issue. Finally, sources of information that are complementary to formal education, especially Wikipedia, are the main references among adolescents. Consequently, it seems essential to guarantee their solvency for appropriate knowledge acquisition.

RESUMEN

Los adolescentes viven inmersos en un universo virtual en el que han construido un modelo propio de entretenimiento, aprendizaje y comunicación. El objetivo de este trabajo es definir los patrones de consumo, creación y difusión de contenidos audiovisuales de Internet en los ámbitos del ocio y las fuentes de información complementarias para uso escolar de los jóvenes guipuzcoanos, atendiendo a las variables de género, curso y tipo de centro. La metodología partió del diseño de un cuestionario auto-rellenable que cumplimentaron 2.426 adolescentes (de 12 a 16 años), estudiantes de los cuatro cursos de ESO. La muestra es una selección aleatoria de 60 centros de Guipúzcoa y un total de 120 grupos, 30 por cada curso. Los resultados corroboran que los patrones de consumo, creación y difusión de contenidos de ocio masculinos y femeninos son monolíticos y opuestos entre sí. Los videojuegos son el eje vertebrador del consumo y creación masculino, mientras que la toma y difusión de fotografías y vídeos de sí mismas es el de las chicas. Estas prácticas repiten los estereotipos de género, por lo que la formación en igualdad se perfila como un aspecto relevante. Por último, las fuentes de información complementarias a la educación reglada, principalmente Wikipedia, se imponen como referencia entre los adolescentes, por lo que es imprescindible garantizar su solvencia para una adecuada adquisición de conocimientos.

KEYWORDS | PALABRAS CLAVE

Adolescents, use pattern, audiovisual content, video game, mobile phone, audiovisual creation, YouTube, social networks. Adolescentes, patrón de uso, contenidos audiovisuales, videojuego, teléfono móvil, creación audiovisual, YouTube, redes sociales.



1. Introduction and state of the question

Their widespread access to and use of new technologies has allowed adolescents to create a universe of their own, characterised by new patterns of consumption, creation and dissemination of audiovisual content. At the same time, this new paradigm poses a challenge for society, and a source of concern for parents and educators, as well as a challenge for the technology industry that influences the development of devices and the production and distribution of content. The objective of this study is to define the online consumption, creation and dissemination habits of adolescents in Guipuzcoa aged 12 to 16 for the purposes of leisure and school work, with a focus on differences between genders, grade levels, and school types. Consumption is defined here as the viewing of audiovisual products and the use of video games in a digital environment; creation as the production of basic content; and dissemination as sharing content via online platforms. Thus, in the context of leisure we analyse online consumption of video games, youtuber content, and tutorial videos, considering these three variables. The context of formal education is analysed in relation to the use of complementary sources like Wikipedia, tutorial videos, documentaries, forums, online texts, and websites with studies and notes. Last of all, the study examines the creation of content – what young people produce and how – and its dissemination – what platforms, networks or messaging apps they use – in each context. The study considers three Research Questions:

- RQ1. What are the patterns of adolescent consumption for leisure purposes?
- RQ2. What sources of complementary information do adolescents consult in their school work?
- RQ3. What leisure or academic content do adolescents create and how do they disseminate it?

In the so-called digital age, young people have been able to turn the Internet and social networks into their own vehicle for communicating and establishing relationships with their environment, creating what is known as the “network society” (Castells, 2006). Since the late 1990s, experts have been coining different terms to refer to these adolescents who navigate the Internet, process information quickly and acquire knowledge actively. The earliest definitions spoke of a “Net Generation” (Tapscott & Williams, 1998; Fernández-Planells & Figueras, 2014), of “Millennials” (Howe & Strauss, 2000), of “Generation @” (Feixa, 2000) or of “digital natives” (Prensky, 2001). Since the beginning of the 21st century, the generation gap has grown ever wider. Young people’s access to multi-function electronic devices with screens of all sizes has grown exponentially, giving rise to a generation of mobile and social network users referred to as “digital residents” (White & Le-Cornu, 2011), the “App Generation” (Gardner & Davis, 2014), or “Generation A” (Coupland, 2010).

These young people constitute a broad audience that has been able to develop its own audiovisual consumption and creation customs and practices in the context of an interconnected universe. In this new scenario, teenagers are “multi-tasking, connected, social and mobile prosumers” (Viñals, Abad, & Aguilar, 2014: 53) who have naturally adopted the tools and resources offered by the web in their everyday lives.

With the rise of the participatory culture and social interaction as its main points of reference (Aranda, Sánchez, Tabernero, & Tubella, 2010), the Internet has become the medium that best responds to their informational, educational and leisure needs, the last of these being based principally on entertainment and interpersonal relations (Buckingham & Martínez, 2013). In recent years, there has been extensive research into how young people interact with the digital environment, both in terms of their consumption habits and practices and in relation to new audiovisual content, video games, or the work of youtubers. In addition, their attitude towards the media and the impact of electronic devices like the mobile phone constitutes another prominent object of study.

Audiovisual consumption is moving progressively away from the television screen, despite its continued importance (Gewerc, Fraga, & Rodes, 2017), to give way to multi-screen and multi-task viewing. This incipient “social television” finds its best vehicles in the laptop computer and especially the smartphone, the quintessential electronic device for managing social relations between young people (Sádaba & Vidales, 2015; Mascheroni & Ólafsson, 2016). The mobile phone has thus gone from being conceived of as a mere communication device to a “multi-use, interactive” tool that allows people to perform all kinds of everyday activities (Méndiz, De-Aguilera, & Borges, 2011: 78).

In this context, free of the limitations of sequentality that characterise traditional audiovisual consumption, teenagers are choosing to consume audiovisual content on demand, for which YouTube is the most popular platform. Initially associated with the mechanics of video game operation, or “gaming”, this platform has managed to attract millions of young followers and amass millions of views thanks to “youtubers”, who create tutorial videos or video blogs on a whole range of topics (Chau, 2010; García, Catalina, & López-de-Ayala, 2016).

In addition to being consumers, teenagers model themselves on these public figures to become creators of their

own videos too, often exposing themselves publicly with no protection of their identity (Montes, García, & Menor, 2018). In the area of video games, on the other hand, the studies published reveal a slightly lower number of users among young people and the participation of a mostly male audience in products of a markedly sexist and/or violent nature (Anderson & Bushman, 2001; Díez, 2009; Alcolea, 2014).

In addition to entertainment, engaging in social relations constitutes one of the main digital consumption activities among adolescents. Noteworthy in this respect is the irrepressible growth of social networks like Facebook or Instagram, used not only for social purposes but also as a source of news and information. The latest data provided by the Basque Youth Observatory (2016) supports the findings of earlier research (Livingstone, 2008; Livingstone, Haddon, Görzig, & Ólafsson, 2011; Boyd, 2014), confirming the high level of popularity of these kinds of platforms among young people. According to these figures, nearly all Basque youth (99%) aged 15 to 29 use a social network and go online daily. Of these, a significant increase is observable in the use of instant messaging services like WhatsApp (the most widely used, at 98.2%) and, to a lesser extent, services with ephemeral content, like Snapchat (22.5%).

While the widespread use of social networks is common throughout this sector of the population, there are notable differences in behaviour patterns between genders. A number of different research projects focusing on gender (Espinar & González, 2009; Estébanez & Vázquez, 2013; Alonso, Rodríguez, Lameiras, & Carrera, 2015) reveal more habitual use, greater public exposure and a higher quantity of content exchange among girls than among boys.

Furthermore, this gender difference extends to the topics of content consumed by young people on YouTube and to video games, as well as more traditional audiovisual consumption (series, TV programs, and films). This issue, which has been the subject of extensive academic research, reflects the persistence of traditional gender stereotypes among the younger generations in relation to audiovisual consumption and creation habits, with females favouring dramatic fiction, reality shows or entertainment news, and males preferring sports and humour (Medrano, Aierbe, & Orejudo, 2009; Masanet, 2016; Pibernat, 2017).

Taking the above into account, María Ángeles Gabino (2004) exposes a clear connection between audiovisual consumption by adolescents and leisure contexts over formal and educational situations. However, Information and Communication Technology (ICT) has an increasingly prominent presence in the classroom, facilitating student access to a wide range of complementary sources during school time on computers and tablets (Eynon & Malmberg, 2011; Fernández-Planells, & Maz, 2012; Solano, González, & López, 2013; Ciampa, 2014). Wikipedia is the most popular source of information used by young people today, and a regularly used academic tool in secondary education (Salmerón, Cerdán, & Naumann, 2015; Tramullas, 2016; Valverde & González, 2016).

With all of this in mind, this article offers a contribution that complements the findings of other similar studies conducted in other regions of Spain, such as Catalonia (Castellana, Sánchez-Carbonell, Chamarro, Graner, & Beranuy, 2007), Galicia (Rial, Gómez, Braña, & Varela, 2014), and Andalusia (Bernal & Angulo, 2013), as well as international studies (Gross, 2004; Arango, Bringué, & Sádaba, 2010).

2. Material and methods

This study analyses data from 2,426 surveys completed by adolescents aged from 12 to 16 who are enrolled in compulsory secondary education (from 1st to 4th year of Spain's Educación Secundaria Obligatoria) in the Basque

Male and female patterns of consumption, creation and dissemination of online audiovisual content by adolescents are diametrically opposed and closed categories. The one characteristic that both male and female adolescents share is that they consume more than they create, as only a small number dare to become youtubers, and the smartphone is the main tool for the production and dissemination of content.

province of Guipuzcoa. These are young people born at the turn of the millennium who have grown up in a context conditioned by new technologies. The results outlined in this article are actually based on data gathered in an extensive research project whose objective has been to conduct an in-depth examination of the influence of new technologies on changes to habits of consumption and creation of content in Basque among the adolescent population. To this end, a self-administered questionnaire was designed with 100 questions, most of which were multiple choice, divided into six blocks. This paper focuses on two of those blocks: leisure and school work, considering content in both the Spanish and Basque languages. The results can therefore be extrapolated to the rest of the Basque Country and to Spain as a whole. The data are analysed based on three categorical variables (potentially defining of behaviour): gender, grade level, and type of educational institution (public or private).

The study universe is made up of 28,817 boys and girls across 108 secondary institutions, and the sampling unit was the group. Cluster sampling was used, stratified by proportional allocation, taking into account the geographical distribution of the schools in Guipuzcoa and the educational levels. The sample is gender-balanced and is made up of a random selection from 60 schools, with a total of 120 groups (2 groups from a different grade at each school), of which there are 30 groups per grade level. The maximum sampling error is $\pm 1.9\%$ for the whole territory of Guipuzcoa. The statistical confidence level is 95% (in the most unfavourable case of $p=q=0.5$). The field work was carried out in the months of December 2016 and January 2017. The surveys were completed in the classroom under the direction of one of the researchers and in the presence of each group's teacher or tutor. The approximate duration of the survey was 45 minutes.

3. Results

The study data demonstrate that gender is the most defining variable of patterns of consumption, creation and dissemination of leisure content among adolescents, but has almost no impact at all on content for school use. On the other hand, the type of institution only influences academic content, while the grade level is key to revealing the evolution of trends in content consumption, creation and dissemination.

3.1. Consumption patterns

3.1.1. Leisure

Video games are the preferred activity among boys, to which they dedicate an average of 76 minutes of their weekend leisure time; for girls they constitute a marginal habit on which they spend an average of 26 minutes. Girls prefer to spend most of their time (95 minutes on average) chatting, tweeting and communicating via WhatsApp, while males spend 67 minutes on this activity.

The classification of the most popular online video games among adolescents combined two criteria: the closed list of the seven most successful games, with 39.9% of users, and the list of "other" games chosen freely by 31.5% of respondents. As it can be seen in Table 1, only three video games on the closed list appear because the other three, Habbo, World of Warcraft (WOW) and Dot A are not used by more than 5%. The Sims was the only video game capable of attracting significant attention among the girls, although this was limited to younger ages. In fact, only 8% of 4th year students reported playing this game. The other video games are

	Total	Boys	Girls
Closed list			
Minecraft	12.3%	18.3%	6.4%
The Sims	11.3%	6.6%	16.5%
League of Legends (LOL)	7.5%	12.2%	2.8%
Open List			
FIFA	16.1%	19%	5.5%
GTA	12.8%	14.4%	7.3%
Call of Duty	10.6%	12.2%	4.9%
Clash Royale	10.2%	11.5%	5.5%
Mode of playing online			
In a group	55.7%	68.8%	30.4%
Alone	38.3%	27.3%	59.9%

predominantly male and popular at all secondary grade levels. Pan European Game Information (PEGI) has classified Call of Duty and GTA as video games suitable for persons over 18, and they therefore represent a risk for underage children who use them. With respect to the mode of playing, more users prefer to play in groups (especially boys), while only a minority plays alone (predominantly girls).

Table 2. Distribution of followers of most successful YouTubers by gender and grade level

	Subscribers 07/05/2018	Views 07/05/2018	Total	Gender		Secondary Year Level	
				Boys	Girls	2 nd	4 th
Elrubius	29,079,272	6,541,425,340	40.6%	53.4%	28.1%	46%	32%
Wismichu	7,097,773	915,715,319	38.8%	53%	25%	44%	37%
VEGETTA777	22,207,174	8,781,537,550	19.7%	31.9%	7.9%	26.1%	12.2%
Willyrex	13,912,660	4,800,438,586	18.8%	30.7%	7.2%	24.1%	13%
Alexby11	7,310,308	1,179,223,661	16.1%	26.5%	5.9%	20.7%	9.3%
Yellow Mellow	1,686,298	138,467,771	12.8%	9.2%	16.4%	13.7%	17.7%
Patry Jordan	3,875,360	514,173,363	8%	1.5%	14.2%	7.5%	12%

YouTube is the most popular platform with young people, and youtubers are their opinion leaders and role models. 60.4% of respondents knew at least one of the seven most successful youtubers included on the closed list, which was prepared according to information provided by students in earlier interviews. Of these, the top five have channels on gaming, and thus their audience is predominantly male. This is the case of the gamers VEGETTA777, Willyrex, and Alexby11. On the other hand, in addition to video games, Elrubius and Wismichu take a humorous look at topics of interest that attract a considerable female audience. Girls follow youtubers less than boys, although they represent the majority of the audience of the two last channels on the Table 2, Yellow Mellow and Patry Jordan. However, the youtubers with more male followers are less popular among older youths, while those with more female followers have bigger audiences at higher year levels. Finally, the survey included one open question that was answered by 68% of respondents, for which, despite a very wide range of results, 20% mentioned AuronPlay. This youtuber, who comments on internet videos, currently has more than 8 million subscribers and more than 1 billion views.

Of all the content available on YouTube, tutorial videos attract a significant youth audience. A total of 62.4% of adolescents view them regularly, and this percentage is notably higher among older respondents. In fact, only 28.9% of 4th year secondary students report that they do not view them, compared to 48% of first year students.

Table 3. Distribution of viewing of most popular tutorial videos by gender

	Total	Boys	Girls
Do not watch tutorials	37.6%	39.9%	35.5%
Video games	28.1%	46.5%	10.3%
Fashion and hairdressing	25.8%	3.1%	47.9%
Technology	19%	25.5%	12.6%
Sports	17.9%	25.4%	10.8%
Travel	12.9%	5.4%	20%
How to make movies	9.1%	8%	10%

The most popular topics of tutorial videos are determined to a large extent by gender. Boys prefer tutorials on video games, technology and sports, while girls watch more tutorials on fashion, hairdressing and make-up, travel, and how to make movies. Older viewers are much more likely to watch tutorials on fashion (14.6% in 1st year compared to 32.3% in 4th) and travel (6.5% in 1st year and 17.8% in 4th). Finally, it is worth noting that tutorials on technology and how to make movies are common to both leisure and school work. These two categories are more popular among private school students, who are significantly more likely to view tutorials on technology (21%) and how to make movies (10.8%) than state school students (15.1% and 6.9%, respectively). Moreover, interest in technology increases with age, as these tutorials are viewed more by students in higher grades (12.1% in 1st year compared to 24.2% in 4th year).

3.1.2. Complementary information sources for school use

Most adolescents consult internet sources other than those offered by formal education; only 14.1% admitted they did not, of which 16.4% were boys and 11.7% were girls. This percentage drops drastically with age, as the use of such sources is more common among students in higher grades: 22.3% of 1st year students stated they do not consult other sources, compared to only 7.1% in 4th year. Wikipedia, with 86.9% of users, is the most popular reference source at all grade levels, followed by tutorial videos (34.9%), texts on school subjects (31%), studies and notes available online (26.5%), documentaries (26.2%), and forums (24.9%).

With respect to gender, it is significant that girls (35.4%) consult more online texts than boys (26.5%), as this suggests a greater interest among females in acquiring higher quality and more detailed information to complement their studies. At the higher grade levels, more students consult texts (17.2% in 1st year compared to 44.3% in 3rd), online studies (17.2% in 1st year and 36.2% in 4th), and documentaries (20.8% in 1st year and 30.8% in 4th). Participation in forums also becomes common in 4th year, with 34% of respondents. Private school students use complementary sources more: 39.2% view tutorial videos, 35.2% look up texts, 28.2% view documentaries, and 28.2% participate in forums. This constitutes a notable difference from state school students, far fewer of whom consult these sources: 24.2% tutorials, 25.5% texts, 23% documentaries, and 20.6% forums.

Table 4. Distribution of knowledge, skills and devices used by adolescents to create content

Knowledge and skills	Total
Record images with a camera, edit them on a computer and create a coherent narrative	31.5%
No knowledge	24.3%
Record images with a mobile	20.9%
Use a camera and editing programs	19.3%
Devices	Total
Mobile phone	35.5%
Computer	19.8%
Tablet	3.6%
Video camera	2.8%

3.2. Content creation and dissemination patterns

Most adolescents possess the technological knowledge and skills necessary to create audio-visual content, and also have access to technological devices: 96.2% possess a mobile phone, 82.4% own a laptop, 62.4% have a desktop computer, and 77.9% have a tablet. However, they tend to consume more content than they create, as creation is the activity that they spend the least leisure time on (28 minutes on average). Girls are considerably more active in content creation, spending an average of 32 minutes compared to 23 minutes for boys.

It is thus not surprising that 85.6% of young people are not youtubers. Of the 7.4% who are, 12.1% are boys and 2.6% are girls. The percentage of youtubers is lower at older age levels, with only 4.9% of 4th year students. Only a small number of adolescents dare to expose themselves to public opinion and the pressure to attract followers. On the other hand, 12.3% of respondents create tutorials to post them on YouTube (15.1% of boys and 9.5% of girls). The 2nd year cohort has the highest percentage of content creators (15.3%), while 4th year has the lowest (9.1%). As might be expected, there is a direct correspondence between the category and hierarchical classification of tutorials adolescents consume, mainly for leisure purposes, and those they produce: tutorials on video games (51.7%) are the most common, followed by sports (32.6%), fashion and make-up (29.5%), technology (26.2%), how to make movies (18.1%), and travel (15.1%). These videos are structured works that require a certain level of audiovisual production knowledge, along with dedication and interest on the part of their creators. As in the case of consumption, tutorials on video games are more common among boys (75%), while fashion and make-up videos are more popular with girls (60.7%). The only content related to school use is technology tutorials. In this case, there are no differences between private and state school students, but age is a determining factor, as the highest percentage of creators (40%) is found among 4th year students.

Along with these tutorial videos, the mobile phone has given rise to a second type of unedited content intended for immediate distribution to friends online. This includes photographs (67.4%), recordings (62.3%), automatically edited videos (61.2%), music (39%), and audio (38.8%). Females give priority to taking and posting photos of friends and selfies, and also to record and share more videos of "friends' stuff" and of parties and concerts.

However, creating and sharing audiovisual content does not seem to be a widespread activity among young people, as 57.2% of respondents report they have never uploaded a video to the Internet, compared to 40.8% who have. YouTube is the channel most widely used by youths for sharing their content publicly. It is followed by Instagram, with a similar gender distribution. The WhatsApp messaging service, used more by boys, and Snapchat, the platform preferred by girls, occupy third and fourth positions, respectively. Finally, Twitter and Facebook rate lower with adolescents. In terms of use by age level, YouTube is more popular at younger ages, while only 38.3% of 4th years use it; on the other hand, use of Snapchat at this year level is higher, at 42.2%.

4. Discussion and conclusions

The results of this research confirm that leisure is the predominant purpose for the consumption, creation and dissemination of audiovisual content by adolescents. Male and female consumption patterns, closed and diametrically opposed to each other, effectively determine content creation and dissemination. In other words, the types of products they consume online directly influence the content they create and the way they share that content. Adolescents are bigger consumers than creators; only a minority dare to become youtubers. Those who do create produce two types of content: on the one hand, the smartphone is the main tool for the virtually automatic "production" of minimalist audio-visual pieces, an activity led by girls; on the other hand, boys produce fewer videos, but the videos they do produce are more structured and of higher quality. In short, the "creation" of content is associated with entertainment and confirms that the vast majority of teens lack the critical capacity to produce audio-visual work, despite having the skills and technical means within their reach.

Video games are the focus of the monolithic profile of male consumption and determine the preference for consuming youtuber and tutorial videos dealing with this subject. This consumption influences production by males of YouTube channels and video game tutorials, resulting in structured content shared mainly on this platform. The gaming habit does not change with age, but the consumption of gamer videos and video game tutorials, as well as the production of the latter, is notably higher among older males. As noted in studies by Craig A. Anderson and Brad J. Bushman (2001), Enrique Díez (2009), Beatriz Muros, Yolanda Aragón and Antonio Bustos (2013), and Gema Alcolea (2014), there is a significant number of minors playing extremely violent video games not suitable for their age level. Call of Duty "justifies" the death of the enemy because the player is a soldier of war. In GTA, the violence is gratuitous; the player is the member of a gang who breaks the law and engages in activity that is denigrating to women. These kinds of games naturalise violence and sexist attitudes that clash with the values of tolerance and diversity that young people should be learning. What is needed, therefore, is a line of research that will explore the possibility of producing non-violent video games that promote gender equality.

Interest in personal life experiences, the importance of fashion and the desire to share content and communicate online are characteristics inherent to internet use by females. In their "productions" they present their image and their public lives, disseminating them on Instagram and WhatsApp. These practices pose risks that need to be investigated in greater depth: the careless, unrestricted exhibition of their private lives (Montes, García, & Menor, 2018) and the influence of the aesthetic standards imposed by the fashion world in the consumption, creation and dissemination of content by females. Youtubers and tutorial videos reproduce these standards, which are then reflected in the photos and videos made by girls, in which they project an image of themselves that attempts to emulate an aesthetic ideal and repeats stereotypical female behaviour.

In the area of school work, the most prominent unregulated source is Wikipedia, while other text sources are of secondary importance. Girls are more concerned with information quality given that they look up and consult more online texts. Audiovisual content is in second place with tutorials on technology or how to make a movie, viewed mostly by private school students, although the level of creation of such videos is similar in state and private schools. However, there is a significant gender imbalance, with boys producing considerably more videos. Forums are used by a minority of respondents, although they become more significant in the higher grade levels, as do tutorials. It is urgent to investigate the repercussions that the systematic use in schools of unregulated sources has on the quality of youth education and to propose measures that will ensure the reliability of these sources.

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Content	Total	Boys	Girls
Photos of friends	55%	40.7%	69.9%
Videos of "friends' stuff"	35.1%	24.9%	46.4%
Videos of parties and concerts	27.1%	21.4%	32.8%
Selfies	23.5%	15.8%	32.1%
Delivery platforms	Total	Boys	Girls
YouTube	45.2%	55.6%	30.6%
Instagram	45%	46.7%	43%
WhatsApp	44.8%	47.9%	40.7%
Snapchat	34.4%	28.8%	42.4%
Twitter	18.5%	18.8%	15.9%
Facebook	13.4%	16.2%	9.3%

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