Impact of the WIGUP platform’s “global citizen” approach?

A survey of 178 students and 8 teachers

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1. INTRODUCTION

In a context where both the development of responsible digital citizens and the development of entrepreneurial skills play a key role in a school’s mission and preparing the citizens of tomorrow, the WIGUP initiative, created by Mark Chatel, deserves a closer look. This initiative is particularly interesting for society today because it aims to promote the development of youth through community engagement and the use of digital technologies by encouraging students and teachers to acquire various skills for the 21st century. This initiative stands out in particular for its “global citizen” approach in which entrepreneurial skills (see Acs, Szerb and Lloyd, 2017) play a key role. In fact, several studies have clearly demonstrated that these skills are too often under-represented in schools (see Bae, Qian, Miao and Fiet, 2014) when they are actually more likely to foster motivation and achievement (see Elert, Andersson and Wennberg, 2015; Wilson, Kickul and Marlino, 2007).

Taking this context into consideration, the Ontario Ministry of Education decided to conduct a pilot project for one school year, with the objective of understanding the impact of this project on students in several classes in different French-language school boards in Ontario. The Ministry gave the Centre franco-ontarien de ressources pédagogiques (CFORP) the mandate to manage the project, which was entrusted to the Canada Research Chair on Technologies in Education.
Under the direction of Thierry Karsenti, the Canada Research Chair team created an exploratory study among eight teachers to deepen the understanding of the various impacts of the WIGUP initiative, including the benefits and challenges encountered by the students and teachers.

This report begins with a brief overview of the WIGUP initiative (Section 2), how it is used in the classroom (Section 3), and the overall and specific objectives of this exploratory study (Section 4). To better understand the relevance of this initiative for students, teachers, schools and society at large, the contextual elements are presented in three sections: technologies in education (Section 5), skills for the 21st century (Section 6), and WIGUP’s global citizen approach or the question of entrepreneurial skills (Section 7). The research methods are then described (Section 8), followed by the main research findings (Section 9). A conclusion (Section 10) completes this research report.
2. WHAT IS WIGUP?

WIGUP (While I Grow UP) is a platform of digital resources (mainly videos) that aims to support students in discovering their interests and potential. For Mark Chatel, the platform’s founder, the idea started with his own personal clear concern: “How are we supposed to choose a career as a teenager?” “Why do so many young adults change CÉGEP programs several times?”

![WIGUP Website Screenshot](https://www.wigup.tv/en/)

WIGUP’s main strength is its vast collection of a wide selection of short documentaries, often produced specifically for the platform. For instance, short videos in which athletes talk about one of their achievements, or ones in which scientists present their work to combat climate change.

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A wide variety of resources enables all students to find various videos that reflect their interests and also help them to discover new interests or new passions. The WIGUP.tv website is also a creative social network for schools, designed to inspire children aged 9 to 14 to “become who they really are,” and at the same time encourage them to acquire skills for the 21st century as well as entrepreneurial skills.

WIGUP’s primary mission is to offer 9- to 14-year-olds the best online educational content in personal growth and character development, in order to help them find their path and mission in life. This humanistic initiative is funded by several partners and the personal contributions of a highly committed team.

The WIGUP website presents its philosophy, as well as information on its team and partners. WIGUP is also an interactive, immersive, educational online site with the aim of helping 9- to 14-year-olds make individual journeys of self-discovery. In addition, the underlying philosophy is to honour the unique contributions of each child for the betterment of our society and our world. WIGUP believes that each child has a unique path, and is uniquely suited to make his or her own contribution to the world. Finding this path is a very personal quest that will lead to a better world for everyone. In this way, WIGUP encourages children to fulfil and grow their potential. WIGUP is also committed to reflecting diversified cultural identities, which support character development and stimulate reflection among youth across all continents.

The WIGUP site provides a showcase where students can share exciting, innovative new projects that reflect their individual uniqueness. WIGUP is a safe social network that allows them to expand their space and connect with all 9- to 14-year-olds, be they at home or elsewhere in the world. WIGUP is
thus a tool to support cultural identity that stimulates reflection, the desire for accomplishment and community engagement among youth.

The WIGUP site offers a variety of resources for children, while also giving them ample space to create their own projects. WIGUP helps introduce technologies into teaching so as to revolutionize classroom dynamics and respond to students’ needs. It provides an Internet channel that offers intelligent, interesting content to encourage children from around the world to exchange and share their experiences. WIGUP inspires students to use their imagination while also encouraging them to imagine what they can do to create an even better world. Many of the proposed resources are also based on actual experiences and stories. WIGUP broadcasts webisodes and news stories that give students an opportunity to enjoy unique experiences. WIGUP can stimulate creativity and innovation in children to help them uncover and discover their personality and “who they really are”. As a creative social network for schools, it can foster students’ interest, motivation and engagement at school, and help them develop skills for the 21st century.

The WIGUP.tv site is accessible to teachers, students and their parents, at school and at home. They can use the themed, captivating, educational pavilions as inspiration and to create innovative projects that make a difference in their communities and around the world. In addition to live local and international broadcasts that provide students with a unique experience, the WIGUP.tv platform also offers over 1000 video clips, interactive whiteboard apps, Web interviews with famous people, and more.

3. USING WIGUP IN CLASS

This section presents how to use WIGUP in class. Three main activities are proposed, but teachers can also use the suggested resources as they see fit.

My favorite video. Students are put into teams of 2 or 3 and must choose one of the videos on the WIGUP site and present it to the rest of the group (present the video and their impressions, for a total of about 5 to 6 minutes per team). To accomplish this, students will
have to have made an effort to search the platform, watch several videos and become interested in different topics.

**Career interview.** Students are put into teams of 2 to 4 students and must interview a person in their community who is passionate about something. The interview and its presentation (to the rest of the class) should not be longer than 6 minutes. Students can also choose a video in the WIGUP database to select an interview of a person who is passionate about his or her community.

**WIGUP project.** Students are put into teams of 2 to 4 students and must complete a creative, social WIGUP project that will help the local, provincial, national or international community (see Figure 1). WIGUP also has a first-rate tool for creating an e-portfolio that can be used for the WIGUP project, which students can use to be “journalists”. They must structure an interview and prepare a presentation by incorporating videos and adding their personal touch to the visual design. The beauty of the tool is that it allows students to be creative while remaining visually simple and intuitive. The platform also allows student/teacher accounts, class lists and subject groups to be managed.
Figure 1. Students working on their "WIGUP" final project.
4. OBJECTIVES

The main objective of this exploratory study was to understand the various impacts of the WIGUP project, including the benefits and challenges for students and teachers, during the 2017-2018 school year.

This study also addresses three specific objectives:

1. Better understand WIGUP’s impact on students’ development of skills for the 21st century.

2. Better understand WIGUP’s impact on students’ development of entrepreneurial skills.

3. Better understand WIGUP’s impact on students’ development of technology skills.

2 The skills for the 21st century are presented in Section 6 of this report.
5. TECHNOLOGIES IN EDUCATION

The objective of this section of the report is to demonstrate that the technologies at the centre of the WIGUP project are all relevant in education.

5.1 The importance of nuancing literature that paints a negative picture of integrating technologies at school

Globally, the OECD report reveals that countries that undertook the rapid computerization of teaching obtained poor results. Even worse: according to the OECD, the more students use new technologies in school, the poorer their results. The report illustrates that considering only ICT equipment is not enough. It is also necessary to think about the instructional purposes the using technologies in schools: this is what will make the difference. Moreover, in its report, the OECD points out that while technologies are vital in education, this digital approach must be carefully studied, and introducing digital tools is effective only if the teachers are properly trained for their educational use. In other words, merely investing in technologies is not enough. It is also necessary to ensure that the educational use of technologies contributes to academic success.

As for John Hattie’s work (2009), in his landmark book Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement, it should be considered that he is citing studies published after 1977. Is it really possible to compare the technologies of 1977 with those of 2016? Absolutely not. Hattie cites some 138 meta-analyses on the use of technologies, but close to half of them were done before 2000. Conflating them is simply impossible. This being said, according to John Hattie, when the factors that could have the greatest impact on performance are considered, such as the teacher’s feedback (the most important factor in his opinion), it is naturally possible to combine these factors with the use of technologies to
encourage student success. Furthermore, Hattie himself acknowledged in 2009\(^1\) that the impact of technologies on performance could be increased if:

1. This makes it possible to vary educational strategies;
2. Teachers have been trained on the educational and teaching use of technologies;
3. The technologies increase the learning opportunities;
4. Students increase their sense of control regarding the learning achieved;
5. There is greater collaborative or peer learning;
6. Feedback is optimized.

### 5.2 Should schools have technologies?

Technologies in schools: progress or distraction? Too much? Not enough? For? Against? The question of whether or not schools should have technologies is not always simple, especially when there is a very polarized debate at the beginning of every school year. About 20 or 30 years ago, it was normal to question whether technologies had an impact on student learning in French immersion classes. Whether they helped to learn more, learn better, learn differently, or developed the desire to learn French, as many wanted. In 2018, this appears to be a misplaced question. When discussing technologies in education, it is high time to get past this debate. The focus must be put back on the teachers and students when it comes to the role of technologies for learning. Instead, the question should be how can technologies help to teach better, learn better, develop skills for the 21\(^{st}\) century, foster the desire to learn, etc. It is the **how** that is important. The era of **for** or **against** is long over, even if many people still hesitate to accept this.

### 5.3 Research shows that technologies have a real positive impact

\(^1\) See pages 220-227.
Our argument is that instead of seeing technologies in education as a cure-all or the Holy Grail, they should be looked at as tools with great potential that need to be used appropriately from an educational aspect. In this regard, the most recent extensive study on the impact of technologies on education (See Zheng, Warschauer, Lin and Chang, 2016) reveals that the greatest potential of technologies is achieved when students each have their own computer-based tool, when they themselves are trained on the educational uses of technologies, and also when their teachers have developed the necessary skills to teach better with the technologies. Thus, like any tool, the impact on learning or the better academic performance of students at school will depend in particular on how the technology is used by both the students and the teachers. And if there really is a desire for technologies to contribute to student motivation and learning, then the role of teachers will never have been more important.

5.4 Can using technologies contribute to academic success?

Can using technologies for learning really contribute to students’ academic success? Many studies have shown that it is possible. But in order to do so, we must look beyond the utilitarian vision of technologies and clearly identify the educational transformations that they could foster in the classroom. And this technology evolution must happen through pedagogy, through teaching that embodies change and innovation—not merely learning how to use the technology, but rather how to teach better with the technology. Therefore, and especially when it comes to technologies in education, no findings from large research projects should be turned into an absolute rule on the art of teaching.
6. SKILLS FOR THE 21ST CENTURY

We retrieved a total of eight main references addressing the skills and competencies that need to be taught in schools to equip students for life in the 21st century (see Voogt & Pareja Roblin, 2012). As a testament to the keen public interest in what are considered 21st century skills, three of these references were produced by world-renowned organizations: UNESCO, the OECD and the European Union. The remaining reviewed references were produced in Australia and the United States.

Main references addressing skills for the 21st century:

- **21st Century Skills and Competences for New Millennium Learners** (OCDE)⁴;
- **Key competences for lifelong learning** (European Union)⁵;
- **UNESCO ICT Competency Framework for Teachers**⁶;
- **Assessment and Teaching of 21st Century Skills**⁷;
- **Partnership for 21st Century Learning**⁸;
- **EnGauge**⁹;
- **National Educational Technology Standards (NETS)**¹⁰;
- **NAEP 2012 Technological Literacy Framework**¹¹.

⁴ [http://www.oecd-ilibrary.org/content/workingpaper/218525261154?site=fr]
⁷ [http://atc21s.org]
⁹ [http://pict.sdsu.edu/21st.html]
¹⁰ [http://www.iste.org/about-iste]
The concept of skills for the 21st century remains polymorphic, not to say polysemic. Nevertheless, Voogt and Pareja Roblin (2012) identified the following eight main skills or competencies that are addressed in the above-mentioned works:

1. Collaboration;
2. Communication;
3. Information and communication technology (ICT) skills;
4. Social, cultural and citizenship skills;
5. Creativity;
6. Critical thinking;
7. Problem solving;
8. Ability to develop and produce quality products.

We then looked for these eight skills in association with the WIGUP project. Other skills are mentioned as well, but less often, including learning ability, autonomy, planning ability, flexibility, adaptability and conflict resolution.
Given top priority in most of these references are ICT skills. Referred to in general as technology skills, they fall into three main categories:

**Information literacy** refers to the capacity to 1) access relevant information efficiently, 2) evaluate the information using a critical approach, and 3) use the information appropriately and creatively.

**ICT literacy** refers to technical knowledge that allows the use of ICT. It can also be understood in the broader sense of the use of digital technologies, communication tools, and/or networks in order to consult, manage, integrate, evaluate and create useful information in the knowledge society.

**Technological literacy** refers to technological knowledge that allows understanding and using ICT in order to resolve complex problems or to create products and services in response to the needs of the knowledge society.
7. ENTREPRENEURIAL SKILLS

The WIGUP project appears to be closely aligned with the development of what are considered entrepreneurial skills in students (see Bae et al., 2014). We therefore felt it appropriate and necessary to address this concept in this report.

In a world where technologies are ever more present, and where young people will have to be trained for jobs that do not yet even exist, entrepreneurial skills should be considered core educational competencies. Not only are these critical skills largely neglected in current school programs, more importantly, they involve the development of attitudes and abilities that will enable students to adapt more easily to the changes that are sure to come. Moreover, these entrepreneurial skills will equip them to build a meaningful future, not only for themselves, but also for their family, friends, and society at large: in WIGUP’s words, to “better the world.” Educating children to develop an entrepreneurial spirit would also mean equipping them to take charge of their own lives, to develop their own capacities, and above all, to believe in their potential to better the world. More broadly speaking, these are transversal skills that will benefit students and their communities throughout their lives.

In addition, by acquiring entrepreneurial skills, students and even preschool children can begin to develop attitudes that will empower them, as autonomously as possible depending on their age, to take initiatives, cope with challenges, and assume a central role in building their future. We must make a distinction here between entrepreneurial skills and enterprise skills. Enterprise skills—also called business skills—are used to build, run, and maintain an enterprise or business. The entrepreneurial spirit, on the other hand, is a desire to improve the quality of life for one’s community or even the entire world. The entrepreneurial skills that students acquire are manifest as an entrepreneurial spirit, to which we may add the ability to apply problem-solving strategies and use the resources needed (or create new resources) to
resolve problems. The entrepreneurial spirit is also manifest when students listen to the needs of their community and respond by seeking a practical solution. Encouraging elementary students to undertake entrepreneurial projects can instill them with a taste for meeting challenges and coping with risks. In general, these types of initiatives have proven enormously popular with students and their communities.

One of the purposes of teaching entrepreneurial skills is to help students become more autonomous, and be able to consider problematic situations and come up with practical solutions by themselves. Once they acquire these skills, students can not only carry out the initiatives they have thought up, more importantly, they will also believe in their potential to achieve their projects and eventually become exemplary citizens. Teaching entrepreneurial skills therefore means finding ways to help students acquire the skills, attitudes, aptitudes, and values of a successful entrepreneur. In order to acquire these skills as they advance along the educational pathway, students must be exposed to academic experiences and activities that foster these attributes. For example, by undertaking small-scale projects that are in line with the educational mission, they can learn about some of the practical aspects of organizing and running a project or enterprise.

Many authors contend that teaching entrepreneurial skills requires granting students greater autonomy so that they can participate in some of the decision making, including some project choices or even the overall direction for the project or learning activity. And we must not neglect the importance of teaching students how to connect with the community. Learning how to build community ties takes time: the process can begin with school outings, interviews, short apprenticeships, and so on. With younger students, it is recommended to expose them to entrepreneurial experiences to introduce them to entrepreneurial values and
aptitudes. It is also recommended to encourage students to use their initiative, resolve problems by themselves, and discover how an entrepreneurial project actually impacts their community. With high school students, more emphasis could be placed on developing a broad range of skills in situations of increasing complexity and/or challenge. It is here that the WIGUP project can play a major role: entrepreneurial skills appear to be well aligned with the WIGUP philosophy, which is that the individual student plays a central role in the learning process.
8. METHODS

This section discusses the research methods supporting the objective of this study, which is to understand the diverse impacts of the WIGUP project (the benefits and challenges for students and teachers who participated in the WIGUP initiatives during the 2017-2018 school year). As recommended in the 6th edition of the *Publication Manual of the American Psychological Association* (2013), it presents the participants (8.1), the data collection instruments (8.2) and the strategies used to analyse the collected data (8.3). A review of the strengths and limitations of the research methods (8.4) concludes this part.

8.1 Participants

In total, 178 students in the Ontario French-language school boards (in grades 5 or 6) and 8 teachers took part in this study. The participants were grouped in 7 schools. The 178 students (92 girls and 86 boys) who took part ranged in age from 10 to 13 years, with an average age of 11.9 years. The participants were selected on a voluntary basis, based on the desire of their teacher to participate in the WIGUP initiative. The data for this study were gathered between November 2017 and July 2018.

8.2 Data collection instruments

To better understand the diverse impacts of the WIGUP project, including the benefits and challenges for participating students and teachers, data were collected from all students and their teachers (178 students, 8 teachers). Six data collection instruments were used:

1. A survey questionnaire for all students (n = 178), three different occasions;
2. A survey questionnaire for all teachers (n = 8), three different occasions;
3. Individual interviews with teachers;
4. The videotaped reports created by the students;
5. The various projects completed by the students;
6. E-mail exchanges with the teachers.
8.3 Data processing and analysis

The data gathered by the questionnaire included Likert scales and open responses. The result is therefore a mixed analysis. The quantitative analysis includes descriptive statistics developed using SPSS 23\(^{12}\) and the online survey tool SurveyMonkey\(^{13}\). The initial analysis results were examined more closely and supplemented by a qualitative analysis of the open response questions, carried out using QDA Miner\(^{14}\). It consisted of a content analysis (see L’Écuyer, 1990; Miles and Huberman, 2003) using semi-open coding built from participant responses related to the main research objectives (uses, benefits and challenges).

Data analysis of the individual and group interviews was performed using an adapted version of the approaches developed by L’Écuyer (1990) and Miles and Huberman (2003). We gave priority to a content analysis approach. The qualitative analyses were once again done using QDA Miner software, which is widely used in qualitative data analysis in research (Karsenti et al., 2018).

8.4 Strengths and limitations of the methods

One of the main strengths of this study no doubt lies in the specific research method used. Combining online survey questionnaires with individual interviews is in itself a major advantage for enhancing and triangulating the results. However, the methods chosen also have their limitations. Firstly, working from perceptions can also be a limitation that we tried to mitigate by including a wide sample of participants and a variety of data collection instruments.

Another study limitation is related to the non-random sample of participants. In other words, our selection of participants did not have the objective of representing a sub-set of the population surveyed. This is because in our educational setting, it was particularly difficult, if not impossible, to randomly select participants. How would we have been able to oblige the

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\(^{12}\) http://www-01.ibm.com/software/analytics/spss/
\(^{13}\) https://www.surveymonkey.com/
\(^{14}\) https://provalisresearch.com/products/qualitative-data-analysis-software/
teachers and students to participate in the survey? Instead, we relied on a convenience sample, or a non-probability sample, that does not attempt to be representative, but simply to use the available or voluntary respondents who are easy to interview. The only restriction for participants was that they agree to participate in the WIGUP project.
9. MAIN FINDINGS

The data analysis results are presented in terms of the study objectives, in order to better understand the diverse impacts of the WIGUP project. We present these benefits according to the three main educational activities completed by the students:

- “My favorite video” project;
- “Career interview” project;
- “WIGUP” final project.

Analysing the three questionnaires that the students answered (498 questionnaires in total), the three questionnaires that the teachers answered (23 questionnaires in total), the individual teacher interviews, the students’ videotaped reports and projects, and even the e-mail exchanges with the teachers, provided a clear understanding of the main benefits of introducing the WIGUP initiative for each of the three educational projects completed during the school year.
9.1 “My favorite video” project

Figure 2 shows the extent to which students and teachers enjoyed the “My favorite video” activity. Both the students and teachers greatly enjoyed this activity. The average degree of enjoyment of the activity is 4.86 (out of 5) for the teachers, and 4.43 for the students, where a score of 5 represents maximum enjoyment, or “very strong enjoyment”.

Figure 2. Degree teachers and students enjoyed the “My favorite video” activity.
Figure 3 presents what the students liked in particular about the “My favorite video” activity. What is really interesting is that “learning something new” was what the students enjoyed in particular (78.2%). For instance, the students liked learning more about people, places, historic events, and even simply about history. They liked “watching videos” as part of the activity (52.5%), and also “using technologies” while at school (51.9%). This was something very positive for them. The students also reported liking “sharing their preferences” regarding the choice of videos (24.8%). Finally, many stated that they liked “finding out who they are” (17.4%) through this activity.

![Figure 3. What students liked in particular about the “My favorite video” activity.](image-url)
Figure 4 shows how much students felt they learned or developed skills by doing the “My favorite video” activity. The chart presents the students’ perception as well as the teachers’ perception of their students. In both cases, the activity strongly fostered learning, or skill development among students.

Figure 4. Perception of having learned or developed skills by doing the “My favorite video” activity (students’ perception, or teachers’ perception of their students).
Finally, Figure 5 shows the main impacts on students of participating in the “My favorite video” activity, as reported by the students or teachers. Motivation (83.9%), communication skills (71.3%) or collaboration skills (68.5%) represent the three main positive impacts on students of participating in this activity. These are followed by autonomy (58.2%), technology skills (53.9%) and creativity (24.6%). Becoming a more informed digital citizen (17.4%) was also evident in the data collected during the study.

![Figure 5. Main impacts on students of the "My favorite video" activity.](image)

Few students or teachers identified challenges related to their participation in this activity, except for the school’s bandwidth, which occasionally made it difficult to watch the videos.
9.2 “Career interview” project

Figure 6 shows the extent to which students and teachers enjoyed the “Career interview” activity. Both the students and teachers greatly enjoyed this activity. The average degree of enjoyment of the activity is 4.86 (out of 5) for the teachers, and 4.39 for the students, where a score of 5 represents maximum enjoyment, or “very strong enjoyment”.

![Figure 6. Degree teachers and students enjoyed the “Career interview” activity.](image-url)
Figure 7 presents what the students liked in particular about the “Career interview” activity. What is really interesting is that “learning about a job” was what the students enjoyed in particular (87.2%). They liked seeing and “listening to real people” talk about their job (77.4%), and also “using technologies” while at school (54.7%). Once again, this was something very positive for them. Finally, the students reported that this encouraged them to start “thinking about a future career” (31.1%), which they enjoyed.
Figure 8 shows how much students felt they learned or developed skills by doing the “Career interview” activity. The chart presents the students’ perception as well as the teachers’ perception of their students. In both cases, the activity strongly fostered learning, or skill development among students.

Figure 8. Perception of having learned or developed skills by doing the “Career interview” activity (students’ perception, or teachers’ perception of their students).
Finally, Figure 9 shows the main impacts on students of participating in the “Career interview” activity, as reported by the students and teachers. As with the “My favorite video” activity, motivation (72.4%) tops the list of the positive impacts of this activity. Entrepreneurial skills are also significant (65.2%) among the positive impacts on students of participating in this activity.

![Figure 9. Main impacts on students of the “Career interview” activity.](image)

Few students or teachers identified challenges related to their participation in this activity, even though fewer positive impacts emerged from the data collected. Nevertheless, it seems that preparatory activities for the “Career interview” project could enable students to get the most out of this activity.
9.3 “WIGUP” final project

The “WIGUP” final project should not be confused with this initiative that is also called WIGUP. As a reminder, in the “WIGUP” final project, students are formed into teams of 2 to 4 students and must complete a creative, social WIGUP project that will help the community. Figure 10 shows the extent to which students and teachers enjoyed the “WIGUP” final project. Both the students and teachers greatly enjoyed this activity. The average degree of enjoyment of the activity is 5.00 (out of 5) for the teachers and 4.53 for the students, where a score of 5 represents “very strong enjoyment”. This is actually the activity that the students and teachers enjoyed the most.

Figure 10. Degree teachers and students enjoyed the “WIGUP” final project
Figure 11 presents what the students liked in particular about the “WIGUP” final project. “Completing a useful project for society” tops the list of what the students liked in doing this major project (89.4%). This is followed by “seeing people’s reactions” once the project was finished (77.4%), “creating” (74.2%), “using technologies” (58.7%), “learning how to raise funds for a good cause” (56.9 %) and “working as a team” (35.1%). Surprisingly, the students even stated, after the project was completed, that they liked “excelling” (making an effort).

Figure 11. What students liked in particular about the “WIGUP” final project.

Figure 12 shows how much students felt they learned or developed skills by doing the “WIGUP” final project. The chart presents the students’ perception as well as the teachers’ perception of their students. In both cases, the activity strongly fostered learning, or skill
development among students. This is actually the activity that had the greatest impact on the students.

Figure 12. Perception of having learned or developed skills by doing the “WIGUP” final project (students’ perception, or teachers’ perception of their students).
Figure 13 shows the main impacts on students of participating in the “WIGUP” final project, as reported by the students or teachers. The greatest impact is related to the level of entrepreneurial skills (78.2%), academic motivation (77.1%) and self-esteem (74.9%). Communication skills (69.8%), collaboration skills (65.4%), development of autonomy (62.1%), technology skills (62.0%) and creativity (57.4%) are next. Finally, there are social skills (44.9%), civic skills (43.5%) and being a responsible digital citizen (14.3%).

The main positive impacts of the “WIGUP” final project, namely entrepreneurial skills, are also reflected in the types of projects completed by the students, where it is clear that this type of skill, which is not often experienced in school, appealed to the children. For example, Figure 14 shows a sale of “Mr. Freeze” to raise funds for the Sudbury SPCA.
Figure 14. Example of a “WIGUP” final project: students selling Mr. Freeze to help the Sudbury SPCA.

Figure 15 shows the collection of baby items (for babies in the students’ community), where the objective was to fill two cribs with supplies to give to the most disadvantaged in their community.
Figure 15. Example of a “WIGUP” final project: students collecting supplies for disadvantaged children.

Figure 16 shows students selling popcorn and lemonade to help the Ronald McDonald House in Toronto.
Figure 16. Example of a “WIGUP” final project: students selling popcorn and lemonade to help the Ronald McDonald House in Toronto.
The main challenges related to the students’ participation in the “WIGUP” final project, as reported by the students or teachers, are presented in Figure 17. The main ones include: the time devoted to doing the project (81.3%), challenges related to choosing a project (74.9%), challenges related to uploading the videos (69.4%) and teamwork (41.2%).

Figure 17. Main challenges for students in the “WIGUP” final project.
10. CONCLUSION

The study revealed that both students and teachers greatly enjoyed the three main activities of the WIGUP initiative (My favorite video; Career interview; WIGUP final project). Furthermore, they enabled everyone to learn and allowed students to develop various skills, without presenting too many challenges.

For the WIGUP final project, the data collected helped to identify 11 main benefits, several of which are also skills for the 21st century. For instance, the WIGUP project enables students to develop civic skills, especially insofar as technologies can help them better their world, whether in the community or society at large, as demonstrated by many of the projects.

Students who are given opportunities to participate in this type of project would be expected to make exceptional advances in terms of skills development. Not only would they learn more about their strengths and weaknesses, they would also be able to develop the competencies and skills they need to become more rounded citizens who can partake fully in world betterment. It is also important to remember that entrepreneurial skills topped the list of benefits of this project. Developing entrepreneurial skills in students also means fostering the basic values that are necessary and desirable for all citizens, today and in future: empathy, solidarity, team spirit, initiative, creativity, leadership, responsibility, autonomy, feeling of competency, organizational ability, and so on. By developing skills through participation in a WIGUP project, the eight classes we studied were able to develop a truly entrepreneurial culture. These entrepreneurial values are closely associated with what are considered 21st century skills, and they can only be developed insofar as they are incorporated into specific educational interventions like the WIGUP project.

These results were not obtained by accident. In fact, the WIGUP project was specifically designed with 21st century skills in mind. Among others, WIGUP’s primary mission is to help youth discover their true selves as they develop their skills, as clearly announced on their website at WIGUP.tv.
Developing students’ entrepreneurial skills may also mean transforming their outlook toward community and social engagement, so that students are inspired to respond not only to their own needs or those of their immediate circle, but also to the needs of society at large. In light of the results of the WIGUP project, it seems that all schools in Canada and elsewhere should encourage their students to discover their true potential to better their community, so that the upcoming generation will become engaged citizens who can participate fully in tomorrow’s world.
11. REFERENCES


