ACTIVE METHODOLOGIES AND INTEGRATED CURRICULUM: CROSSING TOWARDS MOTIVATING PEDAGOGICAL PRACTICES IN SECONDARY VOCATIONAL EDUCATION

Maria Adélia Costa*

Eduardo Henrique Lacerda Coutinho**

*Professor of the Master's in Technological Education and in the Special Program of Pedagogical Teacher Training of the Federal Center of Technological Education of Minas Gerais (Cefet-MG), where she is also Head of the Department of Education. Doctor of Education from the Federal University of Uberlândia (UFU), in the research line Work, Education, and Society. Belo Horizonte, Minas Gerais, Brazil. E-mail: **adelia.cefetmg@gmail.com**

Professor at the Professional Master's in Professional and Technological Education of Cefet-MG, and PhD in Social Sciences at the Pontifical Catholic University of São Paulo (PUC-SP). Belo Horizonte, Minas Gerais, Brazil. E-mail: **educoutinho@cefetmg.br

Received for publication on: 6.7.2019

Approved on: 12.5.2019

Abstract

This qualitative research analyzed secondary vocational education teachers who use motivating pedagogical practices. It seeks to reflect on the possibilities of developing didactics that, although are guided by a traditional and multifaceted curriculum, may encourage critical, creative, and autonomous vocational training, favoring the constitution of an integrated curriculum. The results indicate that the pedagogical practices employed by these teachers are likely to make the relationship between curriculum and school routine a hybrid process, which encourages curriculum integration.

Keywords: Motivating pedagogical practices. Vocational education. Curriculum. Teacher training. Active methodologies.

1. Introduction

In 1997, Decree n. 2.208 determined that technical vocational education would have its curricular organization independent of high school and be offered concomitantly or sequentially to it (BRASIL, 1997). Many educators such as Frigotto, Ciavatta & Ramos (2005) fought to repeal this rule so that technical education could be integrated into high school inseparably.

It was from 2004, with the repeal of said decree and promulgation of Decree n. 5.154, that the Secondary Technical Vocational Education (STVE) could again be offered in an integrated manner. Since then, institutions offering STVE have been facing challenges in implementing the integrated curriculum. Researches, such as the one by Costa (2010), indicate that integrated education is efficient or enough in a singular curriculum matrix. However, its way of development includes pedagogical practices and subjects that are isolated and compartmentalized.

Considering this, it becomes necessary to reflect on the general conception of curricula. The selection of curriculum contents and subjects is a matter of socio-educational prestige, in the correlation of forces in the territorial space of curriculum composition, since not all knowledge and information are selected. Young (2014) discusses the stratification and distribution of knowledge, and access to information in the creation of curricula for the implementation of institutional courses.

In a way, this stratification is evident and stands out in STVE, because integrating a secondary technical course segmented between general and technical training demands efforts. This duality formed between a more academic and propaedeutic training, and a more technical, vocational one, is also a matter of political-pedagogical power. That is, there is a dispute over knowledge and areas of knowledge, which sometimes bend to general training, sometimes to technical training.

The selection of curriculum contents and subjects is a matter of socio-educational prestige

Also, stratification exists within the areas and subjects themselves, which Young (1971) calls high- or low-status subjects. This author investigated connections between social and knowledge stratification (APPLE; BALL; GANDIN, 2013), identifying ways in which schools marginalize working-class youth, classifying knowledge as high (pure, unapplied, working in a general level), or low (more attractive for vocational education).

Reading Young (1971), it seems that he was studying Brazilian STVE, because his reflections are very close to the historical educational duality in which propaedeutic teaching (high status) is geared towards the elite, and technical education (low status) to the children of working parents.

Ramos (2005) highlights that it is necessary to grasp the sense and the meaning of the contents that will be taught. Therefore, it is necessary to recognize them as historically constructed knowledge. This historical construct is inherent to the way knowledge is organized in pedagogical praxis and socio-educational reality.

When it comes to overcoming this dichotomy between general, propaedeutic training, and technical training in STVE, attention should be paid to other curriculum dimensions that are vital to the citizen formation and integrated training of a technical professional. Thus, the 'plurality of cultures, ethnicities, religions, worldviews and other dimensions of identities increasingly infiltrate the various fields of contemporary life' (MOREIRA; CANDAU, 2008, p. 41). Therefore, institutions need to integrate diversity and multiculturalism into the curriculum.

In this sense, Freire (1992) asserts that multiculturality implies living with diverse cultures and is not a natural and spontaneous phenomenon. It implies a decision, political will, mobilization, and organization of each cultural group for the common purpose of historical creation. Thus, it requires an educational practice consistent with these goals of ethics that respects differences.

Thus, Young (1971), Moreira & Candu (2008), and Freire (1992) agree on the need for a curriculum that enables an integrated, unitary and polytechnic formation, associating culture, science, technology, education, work, and technique. Collaborating with

Institutions need to integrate diversity and multiculturalism into the curriculum

this prerogative, Ramos (2005, p. 122) states that 'integration requires that the relationship between general and specific knowledge be built continuously throughout education, under the axes of work, science, and culture.'

In this sense, an integrated curriculum becomes indispensable for an education that can aggregate humanistic, scientific, and technological knowledge and ability to overcome the theory and practice relationship, which, incidentally, is an old discussion.

From this perspective, according to Young (2011), curriculum contents in an integrated proposal fulfill three roles: firstly, ensuring students' access to the production of new and reliable knowledge. Secondly, enabling students to move between their everyday concepts and theoretical ones, associated with different subjects. The third is to generate identity for students and teachers, as the subjects give meaning to what teachers are as members of a profession, and knowing these contents is the basis of their authority over students.

All these aspects pointed out by Young (2011) are important to integrate the general and specific subjects in the curriculum. One of the issues that arise in this case is the need to link these disciplines with the everchanging nature of the world of work, science, and culture.

The teacher must realize that their practice is not neutral, requiring a definition (Freire, 1994). This teaching commitment is fundamental for the materialization of the integrated curriculum and for the technical professional that is under training. So Young (2014) asks teachers – in addition to authorities deciding on the curriculum – to focus on their knowledge and to wonder how this specific curriculum can impact the way students see the world, interpret it and transform it.

Therefore, it is hoped that integrating the propaedeutic and technical disciplines can contribute to the development of citizens and professionals, without imposing dichotomies on education, breaking the boundaries, and integrating humanistic, scientific, and technological knowledge.

Thus, this research aimed to identify teaching experiences in STVE that, although using the traditional curriculum, develop motivating pedagogical practices in their universe: the classroom.

2. Method

This is qualitative research with a descriptive and reflective approach. The strategy for data collection was recording pedagogical proposals that the reporting teachers categorized as following motivating practices because they favored the active participation of students in the construction of the class and acquisition of the knowledge produced.

There were four participating female teachers and one male teacher, who reported their pedagogical practices in this investigation. These teachers are given the following codenames: Tereza, Maria, Beatriz, Carolina, and Francisco. All have a doctoral degree from general education and teacher training. These teachers work in high school and undergraduate technical courses at three public institutions of vocational and technical education.

Teachers were selected for having over 15 years of experience in the continuing education of teachers for vocational education. The technique used in the data collection was a semi-structured interview, a tool that would better make it possible to reach the research object. The scheduling was done through the app WhatsApp. The interviews were recorded and transcribed.

3. Active methodologies for curriculum integration collaboration

Although active methodologies (AMs) are in evidence in the 21st century, their aspects date back to the late 19th century, as is the case with William James (1890 - 1899). Also, there was Dewey's Progressive Education (1979), with an emphasis on learning to learn, and Edouard Claparède (1920), who dealt with topics such as affectivity and its relationships with interest and intelligence.

That said, it is noteworthy that AMs induce students to assume the leading role in the learning process. In this case, students cease to be passive in content expositions and become protagonists of their formative trajectory, subjects of their action. To this end, teachers are responsible for leading and planning the process, mediating students' relationship with new knowledge, to achieve the learning objective. AMs are classified in hybrid education; station rotation; flipped classroom; adaptive education; peer to peer; gamification; maker learning; project-based learning; and problem-based learning.

Active methodologies can be understood as motivating pedagogical practices, as they see learners no longer as docile recipients, deposits of the knowledge (im) posed by teachers, but rather as social beings, who become critical thinkers in dialogue with the educator who, in turn, is also a critical thinker (FREIRE, 1994).

Active methodologies can be understood as motivating pedagogical practices

Faced with these considerations, AMs can be useful to systematize the integration between the areas of general and technical education, as well as between the subjects within their areas of knowledge, when they are implemented in pedagogical practices. It is important to note that the application of AMs requires planning real situations so that it motivates students in the search for socio-educational solutions, combining curricular contents and subjects, and societal demands.

4. Crossing towards motivating and integrative pedagogical practices: the experiences revealed

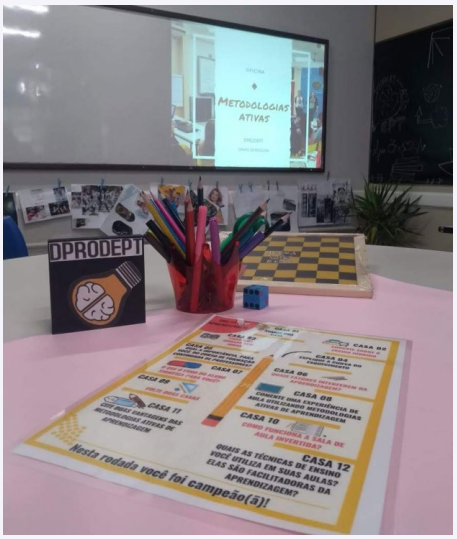
This section introduces readers to the experiences of using AMs to cross towards motivating and integrative pedagogical practices. Digital or analog technological resources can be useful to this end.

The first report will be from teachers Tereza, who teaches History, and Beatriz, an English teacher, who used an analog game called the Learning Trail. The objectives of these activities were, besides promoting and developing aspects related to socializing students of different technical courses or school years, to allow moments of reflection on the importance of playfulness in pedagogical practice as a facilitator of teaching-learning in STVE. Not least was the purpose of enabling interdisciplinary activities from the perspective of developing an integrated curriculum.

Regarding high school students specifically, the objective was to activate their memory about the contents of these subjects, as well as to promote dialogues based on their experiences and realities. According to these teachers, during the game the engagement between the students was noticeable and, in this case, the dispute was motivating.

Although it was just a game, the participants showed that they wished to win in their behavior, attitudes, and actions. Three players and a reporter participated in the trail game. The purpose of having a reporter was to record the questions and answers. Thus, later, the teachers were able to socialize with the whole class the content developed through this activity that is playful but with a well-defined learning objective.

Figure 1 - Learning Trail



Source: Teacher's files (2019).

From the perspective of Epelbaum (2017), this activity is more than a game. It is gamification. The main difference between a gamification and a game is the goal, because in games the purpose is just entertainment, while in gamification, the purpose is motivation, the involvement of people so that the activity is meaningful to them, thus reaching expected learning outcomes.

Gamification was an activity that favored motivating educational practices

Recording the stages or phases of gamification is a way of practicing writing and developing the skills necessary for writing reports since narratives are also pedagogical and learning processes for students. In this process, Arroyo (2013) points out that exploring narratives as didactics means recognizing that educators and learners are subjects with stories to tell. It recognizes that this abundance of experiences carries questions of knowing what is real.

Gamification was an activity that favored motivating educational practices, because, as the teachers pointed out, all students who participated in this activity stated that it was interesting to remember History and English contents through playful activities.

One point brought by teacher Tereza was the possibility of developing the integrated curriculum through interdisciplinary activities, which is possible with this model. In addition, according to this teacher, gamification can also be used as an assessment instrument. That is, a form of materialization of the integrated curriculum occurred through AMs, which, even maintaining the curriculum by subjects, allowed the flexibilization of boundaries between knowledge, information, areas, and sciences.

Therefore, as an instrument of the pedagogical activity, gamification may favor, in addition to cognitive aspects related to the learning of contents, the development of skills from the perspective of the whole learner subject, considering them a historical, political, social, and cultural being.

5. Writing texts in different contexts

In the teacher's room, it is common to hear complaints such as 'these students cannot read; they get problems wrong because they don't know how to interpret them.' Thinking about these narratives, teachers Maria and Carolina, from the Didactics subject of the Teacher Training course (teacher training for undergraduate majors) proposed the production of texts as an activity.

For this, they organized the students of the course in groups of three. The task was to choose a figure from the many possibilities that were exposed at a table. The activity consisted of the group producing a text relating the chosen figure with the undergraduate major of each group component. At first, the activity generated discomfort and complaints such as 'Writing? Write a text?' As they interpreted the command and talked to each other, the text started taking shape and promoted personal and interdisciplinary relationships (as future teachers). It is important to inform that the groups were formed

with undergraduate professors from different areas: Engineering and Humanities; Physics and Literature; Administration and Chemistry.

Libanio (2001) believes that learning to do implies learning to know, and praxis has knowledge as intention. Moreover, creative capacity is created by articulating knowledge and practice, information, and action, both mutually propelling each other, so that modified knowledge generates new practices and vice-versa.

What is relevant in this author's theory is that the act of education integrates the production of knowledge with educational practices, modulated by the subject contents. This praxis of formative integration is the way to remove the historically constructed educational duality between intellectual and manual labor, deconstructing the isolation of purely utilitarian mechanical processes.

This pedagogical practice allowed the teachers to observe the integration between the subjects of the general major with professional education. The fundamental was to join the participants in the theory and in practice, their specific knowledge, and the pedagogical practices of the teachers. Thus, actions can be identified for a humane education that considers humanistic, scientific, social, political, cultural, and professional knowledge.

Some reports from these teachers were recorded: group 1 said they enjoyed the activity, as it was a way of presenting different perspectives on the same issue. Text is a common communication tool and making it extend to every reader, no matter what the subject or discipline, is a challenge.

According to group 2, the activity brought on emotions and affections when talking about the theme. They considered it a rich experience both in trying to appropriate knowledge in assessing the figure and in thinking about ways to leverage text production for student learning.

Group 3 highlighted how important it was to think and work together, in an interdisciplinary way, using resources from the academic background of the three participants (Civil and Environmental Engineering, and Social Communication).

Group 4 said that initially, it was difficult to integrate all members into the proposed activity, however, it was an opportunity to discuss their background and exchange experiences on teaching from different perspectives, since the group was formed by Literature, Chemical Engineering, and Environmental and Sanitary Engineering majors. The routes presented in the figure aroused the desire to travel and discover unfamiliar places.

In these statements, there is an addition of the cultural and social aspects, which aroused the desire to know more about the AMs. Moreover, it was understood that practices such as these challenge the transposition of disciplinary barriers by inducing students to seek elements in other areas, other knowledge, to perform an activity that requires integrated, multidisciplinary, and interdisciplinary knowledge.

Nevertheless, writing text is an act of 'telling stories, it is like a rite of passage, of inquiries about living, to understand. Crossing from meaningless living to the senses of human living built collectively at school' (ARROYO, 2013, p. 282). Collaborating with these ideas, Santos & Silveira (2009) say that reading and writing are undeniable bridges for the inclusion of individuals within society, and also highlight that for a long time the space of the text was relegated to the work of linguistic analysis.

If the school is responsible for the systematization of knowledge, writing concerns all subjects and is not limited to language courses. That said, it is noteworthy that, although the teachers' report on the application of the activity is subjective, it is clear that they sought to diversify the means of transposing disciplinary knowledge so that they could motivate students.

After the activity, the teachers discussed with the class what was easy and what were the challenges experienced by the group. In this conversation, students were encouraged to report on the feeling of producing a text in a subject that was not Literature and/or a Portuguese language course.

6. Digital technologies in the materialization of a real curriculum

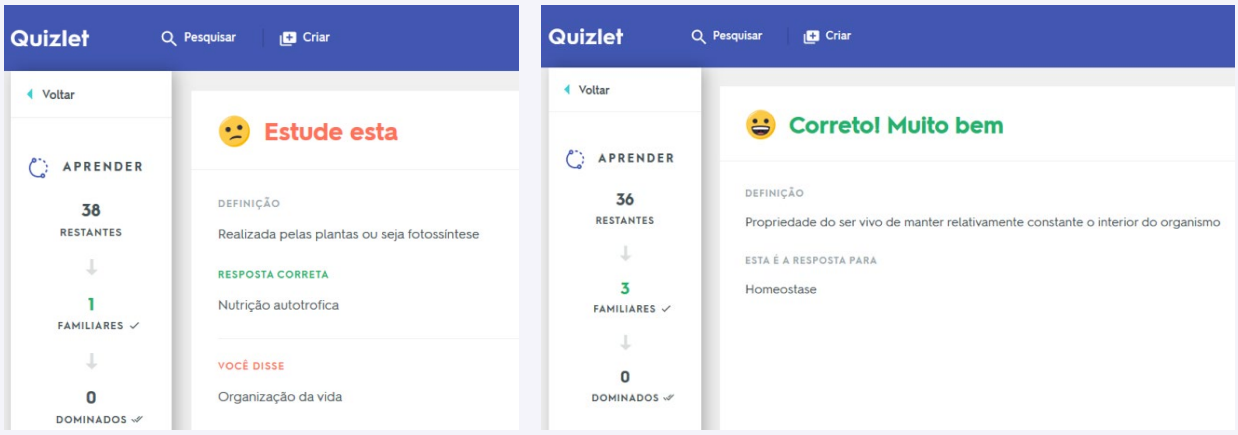
Another alternative used by teacher Maria was the website https://learn.playposit.com/learn/ as a pedagogical resource for revisions and learning. The strategy is to copy a movie of interest to the content being studied from YouTube to PlayPosit. This online platform is relevant as it has the ability to 'pause' the video at a convenient time so students can reflect on a particular subject or concept.

The pause allows one to quickly resume the subject, and by clicking 'continue,' the movie resumes. The future teachers enjoyed learning about the feature and exchanged ideas about ways to use it, such as recording a lesson and posting it on PlayPosit, creating questions for students to answer. This strategy was discussed by teachers from different areas, such as Calculus (a subject with a high failure rate), technical subjects that use electrical circuits, among others.

Teacher Francisco reported the digital activity performed in the computer lab, with internet access, developed at https://quizlet.com. Quizlet creates simple learning tools that help teaching and learning. It is a resource that can be used for assessment and/or innovative classroom practice. It is a website that works with cards, games, and learning tools.

In addition to the classes planned and created by the teacher, there is the possibility of using classes created by other actors, which are available in Quizlet. What is interesting about Quizlet is that, with just one activity description, it organizes eight different exercise/game options.

Figure 2 - Screenshot of Quizlet



Source: Quizlet. Available at: https://quizlet.com/271351087/learn.

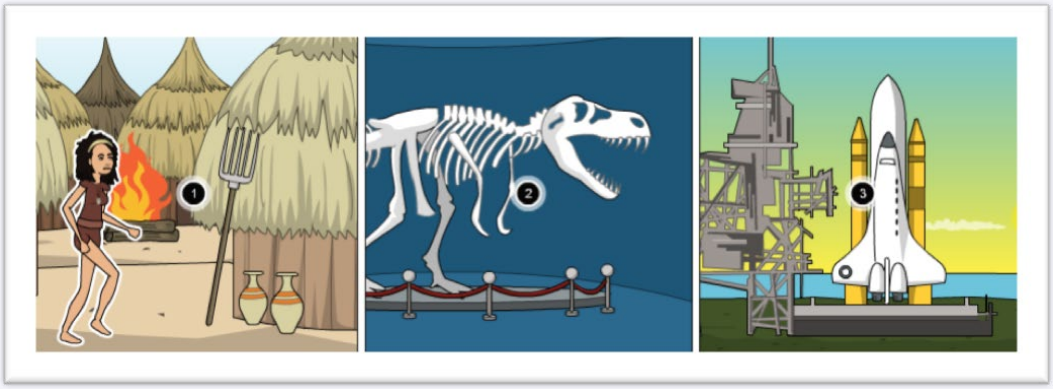
Figure 2 shows the screenshot of a biology activity available at Quizlet. This program allows the user to elaborate unpublished activities or search by subjects that may be available for application in the classroom. Also, if the teacher chooses to use it as an assessment tool, it will not necessarily be the same assessment for all students with access, as the website itself varies the order of questions.

Another activity that used digital technology was the elaboration of comics through the website Pixton. The History and English teachers invited a fellow Physics teacher to participate in this activity. First-year technical students were challenged to draw up a comic book in which they could relate the three subjects.

According to Paiva (2013), education regarded as not only a school process that welcomes and recognizes comic books as beneficial, contributing to reading, specific knowledge and even as life examples. Guimarães (2010) states that a comic is a form of artistic expression that represents a movement through the registration of still images. Thus, 'the history of human evolution was an event recorded through images, regardless of whether this attempt was made on a cave wall thousands of years ago, on a tapestry, or even on a single painted canvas' (p.30).

Figure 3 is a screenshot of part of a student group activity.

Figure 3 - Screenshot of student activity from the perspective of the integrated curriculum



Source: Personal file.

In this activity, teachers reported that there was a rapport between team members. They rated this practice as motivating and considered that the role of active students, when induced to utilize their potential for autonomy and creativity, might surprise teachers. In the specific case of Figure 3, although it may seem like a simple activity, the text was written in the English language, and this group was able to coherently articulate aspects of prehistory with Newton's Laws.

It should be noted that the only command for the activity was that the group should relate the contents of the three subjects: History, English, and Physics. Thus, there was a diverse range of contents addressed, as each group sought to integrate the subjects that most aroused their interest. Another interesting point is that, besides this aspect of the AMs and the curriculum integration, the students made it possible to review the content of different units studied. Given the above, active pedagogical practices can be useful as tools for curriculum integration, as well as a motivation to learn in students.

Considering the whole context presented and reflecting on the integral education of students, consistent with an integrated curriculum proposal, even if it is organized in a traditional conception, it is of utmost importance to consider the context in which the curriculum takes place and to identify the school as a favorable place for the materialization of motivating and integrative pedagogical practices.

7. Final considerations

Three aspects need to be pointed out in this conclusion. The first refers to the fact that, despite mentioning an integrated curriculum in STVE, historically, institutions have reported conjunctural, structural, pedagogical, and ideological difficulties in trying to implement and consolidate this integration. Thus, based on the present study, it was possible to understand that motivating pedagogical practices, through the application of AMs, with the use of digital or analog technologies, as

Young students in the technical courses were motivated to carry out the activities through analog games

reported and expanded in this text, can be pedagogical instruments in the systematization and implementation of integrated curricula.

Another aspect to be considered is the importance of playfulness pointed out in the reports of the investigated teachers. It was evident that the young students in the technical courses were motivated to carry out the activities through analog games or using digital resources. Regarding this pedagogical innovation, in the case of traditional curricula, it is understood that hybrid teaching can be an ally in motivating pedagogical practices since they induce the critical and creative participation of students.

Finally, it is noteworthy that the reports also have implications for the way students evaluate their learning. However, for the evaluation to go beyond the reductionism of classificatory tests, it is essential that teachers understand it as an act of teaching and action. All reported activities could fit the conception of the so-called formative assessment, which consists of continuously analyzing the process.

Thus, it is concluded that the present study was relevant for the research in the context of STVE and teacher education, as it favored the understanding of pedagogical actions that contribute to the human and integrated formation of the students of secondary technical courses.

References

APPLE, Michael W.; BALL, Stephen J.; GANDIN, Luis Armando (org.). **Sociologia da educação**: análise internacional. Porto Alegre: Penso, 2013.

ARROYO, Miguel Gonzalez. **Currículo, território em disputa**. Petrópolis: Vozes, 2013.

BRASIL. **Decreto n. 2.208 de 17 de abril de 1997**. Regulamenta o § 2 º do art. 36 e os arts. 39 a 42 da Lei n. 9.394, de 20 de dezembro de 1996, que estabelece as diretrizes e bases da educação nacional. Brasília, DF: Presidência da República, Casa Civil, 1997. Disponível em: http://www.planalto.gov.br/ccivil_03/decreto/D2208.htm. Acesso em: 08 abr. 2018.

CLAPARÈDE, Edouard. **A escola sob medida**. Rio de Janeiro: Fundo de Cultura, 1920.

COSTA, Maria Adélia da. **Formas estruturantes da organização curricular e a materialização do Proeja no curso técnico de mecânica do CEFET-MG.** 2010. Dissertação (Mestrado em Educação Tecnológica) – Centro Federal de Educação Tecnológica de Minas Gerais, Belo Horizonte, 2010. Disponível em: http://forumeja.org.br/pf/sites/forumeja.org.br.pf/files/dissertacaao.pdf. Acesso em: 02 jun. 2019.

DEWEY, John. **Experiência e educação**. 3 ed. São Paulo: Editora Nacional, 1979.

EPELBAUM, Rosa. **Os principais benefícios da gamificação**. [S. l.]: Ellux Consultoria, 2017. Disponível em: https://www.elluxconsultoria.com.br/beneficios-gamificacao. Acesso em: 04 jun. 2019.

FREIRE, Paulo. **Pedagogia da autonomia**: saberes necessários à prática educativa. São Paulo: Paz e Terra, 1992.

FREIRE, Paulo. **Pedagogia do oprimido**. 23. ed. Rio de Janeiro: Paz e Terra, 1994.

GUIMARÃES, Edgard. **Estudos sobre história em quadrinhos**. João Pessoa: Marca de Fantasia, 2010.

LIBANIO, João Batista. **A arte de formar-se**. São Paulo: Editora Loyola. 2001.

MOREIRA, Antonio Flávio; CANDAU, Vera Maria. **Multiculturalismo**: diferenças culturais e práticas pedagógicas. Petrópolis: Vozes, 2008.

PAIVA, Fábio da Silva. **Educação e violência nas histórias em quadrinhos de Batman**. Recife: Editora UFPE, 2013.

RAMOS, Marise. Possibilidades e desafios na organização do currículo integrado. *In*: FRIGOTTO, Gaudêncio; CIAVATTA, Maria; RAMOS, Marise. **Ensino Médio Integrado: concepções e contradições**. São Paulo: Cortez, 2005.

SANTOS, Hiliana Alves dos; SILVEIRA, Soraya Pedrosa da. A importância da utilização do texto e a articulação entre as áreas de conhecimento. **Brasil Escola**, [São Paulo], 2009. Canal do Educador. Disponível em: http://educador.brasilescola.uol.com.br/trabalho-docente/importancia-texto-articulacao-areas-conhecimento.htm. Acesso em: 02 mar 2018.

YOUNG, Michael. **Knowledge and control**: new directions for the sociology of education. New York: Macmillian, 1971.

YOUNG, Michael. O Futuro da educação em uma sociedade de conhecimento: o argumento radical em defesa de um currículo centrado em disciplinas. **Revista Brasileira de Educação**, São Paulo, v. 16, n. 48, p. 609-623, set./dez. 2011.

YOUNG, Michael. Teoria do currículo: o que é e por que é importante. **Cadernos de Pesquisa**, São Paulo, v. 44, n. 151, p. 190-202, mar. 2014.