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THE MEANINGFUL LEARNING KEYCHAIN:
using Fink's Taxonomy to plan meaningful classes

CHAVEIRO DE SIGNIFICAÇÃO DE APRENDIZAGEM:
utilizando a Taxonomia de Fink para planejar aulas significativas

LLAVERO DE APRENDIZAJE SIGNIFICATIVO:
utilizando la Taxonomía de Fink para planificar clases significativas

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Abstract
In any grade, year, or academic period, one of the greatest challenges teachers face is ensuring that their students learn as much as possible – and for that, they must rely on students' attention, engagement, and interest. Students in any given class, however, differ significantly from one another. They have had different life experiences, enjoy different activities, possess multiple intelligences, and have distinct learning styles (Gardner, 1995; Travassos, 2001). How can teachers foster student engagement while developing creative confidence and a sense of meaning in what students learn? This article presents a literature review on meaningful learning, from which a strategic tool was conceived and tested for planning active-learning classes in which the meaningfulness of learning is strengthened. It also presents the methodology used to create the tool, as well as its design and structure: the Meaningful Learning Keychain. The Keychain was developed over four semesters of observation in undergraduate courses and was later tested both in courses taught by the author and in practical workshops on designing learning activities offered to undergraduate and high school teachers. Finally, the article reports initial impressions of the tool's use and offers suggestions on how any teacher can create their own Activity Keychain and apply it in any subject – or even use it as an integrative resource across different subjects – to activate the greatest possible number of students.

Keywords: Meaningful learning. Learning styles. Creativity. Taxonomy.

Resumo
Em qualquer série, ano ou período letivo, um dos maiores desafios dos professores é conseguir que os estudantes de suas turmas aprendam o máximo possível, e para tanto, eles precisam contar com sua atenção, engajamento e interesse. Entretanto, os estudantes de uma turma, qualquer que seja, são muito diferentes entre si. Eles tiveram experiências de vida diferentes, gostam de atividades diversas, possuem inteligências múltiplas e cultivam

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REVISTA PEDAGÓGICA
Revista do Programa de Pós-Graduação em Educação da Unochapecó
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diferentes estilos de aprendizagem (Gardner, 1995; Travassos, 2001). Como obter o engajamento desses estudantes, criando confiança criativa e atribuindo significado para aquilo que aprendem? Este artigo apresenta uma pesquisa bibliográfica sobre aprendizagem significativa, a partir da qual foi concebida e testada uma ferramenta estratégica para o planejamento de aulas ativas, em que a significação da aprendizagem é potencializada. Apresenta também a metodologia de criação, a concepção e estrutura da ferramenta: o Chaveiro de significação de aprendizagem. O Chaveiro foi concebido a partir de quatro semestres de observação em turmas de graduação, tendo sido o conceito testado posteriormente em disciplinas lecionadas pelo autor e em oficinas práticas de criação de atividades oferecidas a professores de graduação e do ensino médio. O artigo, por fim, relata as primeiras impressões do docente sobre o uso da ferramenta e traz sugestões de como cada professor pode criar seu próprio Chaveiro de Atividades, além de como este poderá ser aplicado em qualquer disciplina ou mesmo utilizado como integrador de diferentes disciplinas visando ativar o maior número possível de estudantes.

Keywords: Aprendizagem significativa. Estilos de aprendizagem. Criatividade. Taxonomia.

Resumen
En cualquier serie, año o período lectivo, uno de los mayores desafíos para los docentes es lograr que los estudiantes de sus clases aprendan al máximo; para ello, necesitan contar con su atención, participación e interés. Sin embargo, los estudiantes de un mismo grupo son muy diferentes entre sí. Han tenido experiencias de vida distintas, disfrutan de actividades diversas, poseen inteligencias múltiples y presentan diferentes estilos de aprendizaje (Gardner, 1995; Travassos, 2001). ¿Cómo lograr el compromiso de estos estudiantes, generando confianza creativa y significado en lo que aprenden? Este artículo presenta una investigación bibliográfica sobre el aprendizaje significativo, a partir de la cual se concibió y se probó una herramienta estratégica para la planificación de clases activas, en las que se potencia la significación del aprendizaje. Presenta también la metodología de creación, así como la concepción y estructura de la herramienta: el Llavero de Significación del Aprendizaje. La concepción del Llavero se desarrolló a lo largo de cuatro semestres de observación en clases de pregrado y el concepto fue posteriormente probado en asignaturas impartidas por el autor y en talleres prácticos de creación de actividades ofrecidos a docentes universitarios y de enseñanza media. Finalmente, el artículo relata las primeras impresiones sobre el uso de la herramienta y ofrece sugerencias sobre cómo cada docente puede crear su propio Llavero de Actividades y cómo este puede aplicarse en cualquier asignatura o incluso utilizarse como elemento integrador entre distintas disciplinas para activar al mayor número posible de estudiantes.

Palabras clave: Aprendizaje significativo. Estilos de aprendizaje. Creatividad. Taxonomía.

Introduction

In her first-grade class, the teacher asks everyone to draw someone from their family. The children, most of whom are five years old, draw and scribble excitedly. They use bright colors and finish quickly. Then comes a surprise: in addition to drawing her brother, one little girl also drew the teacher. The teacher holds up the drawing, smiles and thanks the girl, and asks whether her hair really sticks out like

REVISTA PEDAGÓGICA
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

that (in the drawing, her hair appears as straight strands radiating like sunshine). The class bursts into laughter, while the smile fades from the girl's face.

Without realizing it and without any deliberate intention, the teacher exposed the child to the judgment of the class. She did not like it that her classmates laughed at her drawing. Many of them had probably drawn pictures of poorer quality than hers, but no one knew, because the spotlight was on her. When, on another day, the teacher asked for a new drawing, the girl drew something more discreet and did not even want to show it to her classmates.

This brief story, which is true, happens every day. In fact, it happens to people of all ages, who change their behavior in response to social judgments because they want to feel accepted by their peers. In a NASA-funded study, Beth Jarman and George Land (1990) followed a group of 1,600 children aged 5 to 20. As the children grew older, they administered divergent thinking tests and found that at age 5, 98% of the group was highly creative, a percentage that steadily declined until, at age 20, only 2% could still be considered highly creative. They concluded that this reduction stemmed from emotional blocks resulting from social judgments and that these individuals had not lost their creative ability, but had stored it away somewhere over the years, hidden precisely because of their fear of being judged or criticized.

Ken Robinson, in his TED Talk "Do schools kill creativity?" (Robinson, 2006), suggests that this process begins in school, influenced by teachers, parents, and peers. By criticizing what differs from what is expected or considered correct, they expose children to the right–wrong standard, which in turn causes them to repress their creativity. We see students trying to identify what the teacher expects them to do, rather than allowing themselves to be bold – becoming more concerned about conforming to consensus than with learning. This dynamic aligns with Solomon Asch's theory of social conformity (Santos, 2023), according to which people seek to act in accordance with the social groups they belong to in order to be accepted, shaping their behavior according to the characteristics and norms of those groups.

Much of the emotional origin of creative blockage is linked to this fear of being judged, or fear of how others see us. When we expose ourselves, we become vulnerable to criticism. Instinctively, we seek acceptance rather than criticism, and

REVISTA PEDAGÓGICA
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

we tend to retreat into a space of neutrality, keeping much of our creative potential hidden away. The problem is that we not only block artistic creativity but also our creative way of being, and this lack of creative confidence affects everything: we block ideas, the way we express ourselves, our boldness, and even our joy in living. Yet adult life values creativity as an essential skill. Mistakes are fundamental to the creative process (Kelley; Kelley, 2019), as they allow us to discover new facets of the problems that arise throughout life and invite learning through reflection (Schön, 2000).

Previous research has addressed the recovery of this creative confidence by overcoming fears and allowing ourselves to create (Kelley; Kelley, 2019) or by accepting vulnerability – that is, allowing ourselves to make mistakes and expose ourselves (Brown, 2016). However, it is also possible to look at individuals while they are still of school age, focusing on learning processes and imagining ways to mitigate their losses.

Based on these reflections, the guiding question for this study was formulated: "How can academic activities be created that enable reflection in the learning process, reducing the fear of error and judgment?" This question led to a literature review on creative confidence (Kelley; Kelley, 2019), self-confidence in the learning process (Fink, 2007), and, above all, meaningful learning (Ausubel, 1963; Dewey, 1980; Fink, 2007).

A course is designed based on pedagogical objectives related to specific competencies, skills, and attitudes that students should acquire or develop. As such, it must take into account the other courses students take concurrently and how the course interacts with the real world in which they live. The definition of these educational objectives often follows a hierarchical learning structure grounded in Bloom's Revised Taxonomy (Krathwohl, 2002), according to which students must first remember what they learned previously, understand what they are learning, apply it, analyze results, evaluate, and finally create.

Learning objectives indicate where one wants to go. The path to achieving them is mapped out by teachers in their lesson plans through the strategic planning of teaching and learning activities. Among the various ways to do this are active-learning methodologies, which can represent major innovations and

ISSN 1984-1566 (on-line)

considerable gains in this process – especially when applied in targeted ways, according to the challenges of each course (Beltrão, 2017).

Active-learning methodologies are student-centered, with students playing an active role in acquiring knowledge and teachers serving as intermediaries or facilitators of access to content. Classes place less emphasis on theory and seek the collective construction of knowledge, which can be developed in greater depth.

Each class is composed of students who bring different learning backgrounds and varied interests. Therefore, it is necessary to create teaching–learning situations that foster connections between what each student already knows and new materials and information, helping to activate motivations that lead them to take an active role in the learning process. A key question in this regard is how to help such diverse students find meaning in what they learn – that is, how to get them to take action and create strategies that allow us to make them more active, so that they can take full advantage of the learning process and achieve the intended educational goals.

Fink's Taxonomy of Significant Learning (2007) describes six distinct categories of learning that can bring meaning to students, sensitizing them to begin a process of meaningful learning.

This article presents the Meaningful Learning Keychain and proposes a strategy for fostering meaning in learning, based on Fink's (2007) Taxonomy of Significant Learning, suggesting a way to combine different active-learning methodologies grounded in the categories of Significant Learning. This strategy can be used in any pedagogical planning process, in any subject or school year, with the aim of engaging students and thereby supporting gains in self-esteem and personal fulfillment – elements that work in opposition to social judgments and help foster creative confidence (Kelley; Kelley, 2019).

The Keychain concept emerged from four semesters of observation in undergraduate classes and was later tested in courses taught by the author and in practical workshops on designing educational activities offered to higher education and high school teachers.

REVISTA PEDAGÓGICA
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

1 Each individual perceives the world differently

Gardner (1995), in his theory of multiple intelligences, demonstrates that people learn in different ways because they have different interests and abilities. We all possess, to a greater or lesser degree, the following intelligences: verbal, logical–mathematical, spatial, musical, bodily–kinesthetic, naturalistic, interpersonal, and intrapersonal.

Each intelligence is a skill or potential that helps individuals in their daily lives and in solving problems. We are all born with varying degrees of each intelligence, which can be enhanced through environmental stimuli (Albino & Barros, 2021).

According to Albino and Barros (2021), intelligences are independent but depend on one another to function. We have different levels of each intelligence and combine them in various ways to perform everyday activities. For these authors, the theory of multiple intelligences shifted the teacher's role from transmitter of knowledge to a stimulator of intelligence or an enhancer of abilities. As a result, the focus has shifted from content-centered teaching to the student, and from teaching to learning.

Different levels of each intelligence, in addition to being related to stimuli that are more or less appealing to each student, influence the way learning occurs, giving rise to different learning styles.

There are four learning styles, as defined by Alonso, Gallego, and Honey (2007, apud Ikeshoji & Terçariol, 2021): active, reflective, theoretical, and pragmatic.

> In the active style, the main characteristics are being lively, improvisational, exploratory, willing to take risks, and spontaneous. These are individuals who enjoy new experiences and challenges, like to be at the center of activities, and appreciate problem-solving.
> In the reflective style, the characteristics include being thoughtful, conscientious, receptive, analytical, and understanding. These individuals prefer to consider experiences and observe them from different perspectives, thinking through possible alternatives before making decisions.
> The theoretical style is associated with methodical, logical, objective, critical, and structured characteristics – observed in people who approach problems vertically, in logical steps, and who tend to be perfectionists. They think deeply when establishing principles, theories, and models, and seek rationality and objectivity.
> In the pragmatic style, the characteristics include being experimental, practical, direct, effective, and realistic. These individuals put ideas into

REVISTA PEDAGÓGICA
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

> practice, take advantage of opportunities to test them, enjoy projects that interest them, make decisions, and like to see them implemented. They operate under the principle that things can always be improved (Ikeshoji & Terçariol, 2021, p. 100, our translation).

However, just as students have different learning styles, each teacher also has their own. In traditional teaching, this style is directly reflected in the teacher's natural way of teaching, which draws them closer to students who learn in similar ways and distances them from those who learn differently. In the student-centered approach proposed by Gardner (1995), however, it is important to reach all students, creating meaning for their learning process in equal measure.

Thus, teachers must develop activities that appeal to different learning styles, which means fostering different intelligences in students through varied stimuli that help them identify with and engage in the learning process.

2 Meaningful Learning and Fink's Taxonomy of Significant Learning (2007)

More than a century ago, John Dewey (1980) stated that teaching should take into account the abilities that students already possess and stimulate them so that what is taught can make sense and thus be genuinely learned. The motivation to learn – or to actively engage in something – according to the author, cannot be created artificially; it exists naturally and can be found when the teacher creates the appropriate conditions for it.

Ausubel (1963) referred to this process as meaningful learning, arguing that students must find meaning in what they learn. Meaningful learning occurs when students relate new information to some pre-existing aspect of their cognitive structure, transforming themselves as they learn, through the reframing of knowledge, which, in turn, creates conditions for the progressive acquisition of new knowledge. The more one learns, the more one becomes able to learn, in a spiral of learning.

Meaningful learning is, therefore, learning through discovery, since much of what is learned is actively selected and acquired by the student. It stands in contrast to rote learning, in which information is simply memorized. In meaningful learning, knowledge is constructed and therefore becomes more solid, as it is not merely

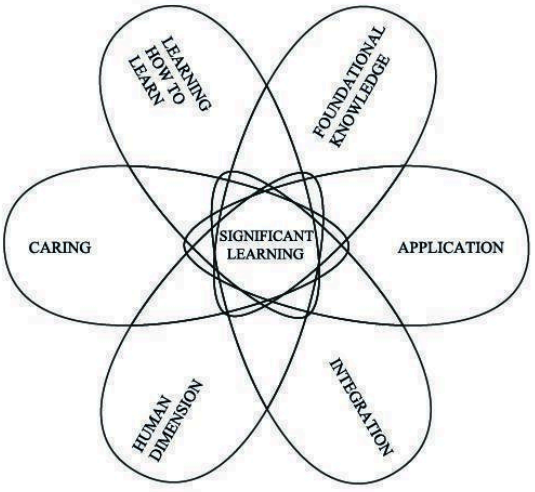
REVISTA PEDAGÓGICA
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

accumulated in memory.

However, this perception of meaning occurs naturally only in certain situations – such as when the learning styles of the student and teacher are similar, when students strongly identify with the content of a subject, or when the lesson topic connects to reality or to something the student already knows. Yet such connections may appear only for some individuals, while the rest of the class may not feel stimulated or involved.

Reflecting on these potential relationships as motivators for student engagement, Fink (2007) developed the Taxonomy of Significant Learning (see Figure 1), consisting of six categories. Each of these categories can be understood as a factor that creates meaning and engagement. According to Fink, if teachers take these different categories into account when planning lessons and activities, they will be able to reach a far greater number of students and foster greater involvement and participation in the class.

Figure 1 – Taxonomy of Significant Learning



Source: adapted by the author from Fink (2007).

According to Fink (2007), meaningful learning lies at the intersection of six categories of learning and may arise from one or more of them – and certainly from the presence of all of them.

Foundational Knowledge refers to the essential content of a subject – its

ISSN 1984-1566 (on-line)

fundamental concepts. Knowing something is related to the student's ability to understand and remember specific information and ideas in the subject. This category is naturally present when students like the subject or feel affinity for the lesson content.

Application is a learning category related to the intellectual, physical, or social use of what is studied, often involving the development of new skills or competencies. Applicability conveys a sense of usefulness in what is learned: when students perceive that the content can be applied in the real world, it becomes more meaningful.

Integration occurs when connections between different knowledge, people, and ideas become apparent, allowing for the construction of knowledge greater than the simple sum of its parts. Students learn something new that emerges from these connections.

Human Dimension refers to what students come to understand about themselves or about their role in a given situation, contributing to an enhanced sense of agency and growth. In this article, we conceptually align the Human Dimension with personal fulfillment. Students discover something about who they are, develop the sense that they are capable of changing the world, and recognize what they can achieve based on the personal implications of what they have learned. This category also relates to a better understanding of how others act and how students interact with their peers. It contributes to the development of a sense of self-efficacy, which is essential for building creative confidence (Kelley; Kelley, 2019).

Caring is related to "reflection-in-action," as described by Schön (2000), in which attending to the process alters its course. The student does something, understands what they have done, analyzes the results, corrects, and does it again – learning from mistakes. This category also involves shifts in perspective, changes in values, and a new way of seeing the world based on what has been learned. Learning associated with this category generates high engagement.

Learning how to learn is also related to "reflection-in-action" (Schön, 2000), when students take ownership of the process, discover how they learn best, identify pathways, make choices, and, based on these choices, construct expanded

ISSN 1984-1566 (on-line)

knowledge – learning autonomously.

Fink's Taxonomy (2007) was designed for course planning, as a basis for systematizing pedagogical strategies aimed at achieving learning objectives. The categories of Significant Learning should be considered when planning teaching and learning activities in order to engage as many students as possible.

Considering that each student can be engaged by different stimuli – and assuming that these stimuli are encompassed within Fink's (2007) categories of Significant Learning – we can infer that whenever a course includes activities that address the six categories, all students will have been reached and activated in some way. If we rethink our teaching practices based on these categories, we can certainly identify which ones are most present in each activity. By modifying our proposals to include elements that refer to other categories, we increase the effectiveness of the activities.

Practical activities, for example, clearly refer to applicability. However, if they address aspects of the real world and propose engaging challenges to students, they can also promote personal fulfillment.

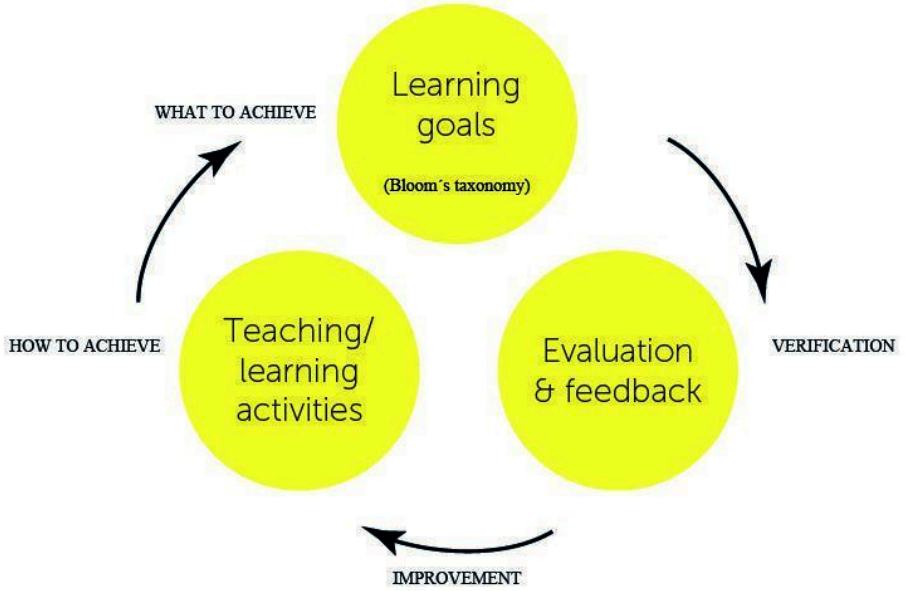
A joint challenge proposed by teachers from two subjects can generate not only personal fulfillment, but also applicability and integration.

If we think of each category of significant learning as a key for activating learning, it becomes possible, based on the objectives of the subject, to create activities that address different categories in Fink's framework, that is, different activation keys. The combination of these activities constitutes a Meaningful Learning Keychain for the subject.

With the Meaningful Learning Keychain for activities, we increase the likelihood of creating meaning, activating the process, and engaging the student.

REVISTA PEDAGÓGICA
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

Figure 2 – Stages of the Teaching–Learning Process



Source: Prepared by the author (2023).

Figure 2 shows that the results of each semester or school year can generate insights for improving these strategies in subsequent cycles, giving greater or lesser weight to the keys used – or rather, the categories of significant learning – in a cyclical process of refining pedagogical practices.

3 Methodology for Creating the Meaningful Learning Keychain

As mentioned earlier, the Meaningful Learning Keychain is a strategic resource for planning meaningful subjects. It was created from four semesters of observation in undergraduate classes during the author's master's research (Beltrão, 2017), as a by-product of the bibliographic investigation conducted for the dissertation. The Keychain was presented to higher education and high school teachers in workshops organized by the ESPM-Rio Pedagogical Innovation Center and was tested both by the author and by other teachers.

The research was developed according to the following stages:

Direct observation – The application of active-learning methodologies was observed in undergraduate classes, both in courses taught by the author and in courses taught by other instructors. Based on observing the development of the

REVISTA PEDAGÓGICA
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

activities and the results obtained, it was possible to infer which categories of Fink's Taxonomy (2007) were related to each set of practices.

Recording – The observed practices were documented, and examples of each application were collected for later analysis.

Analysis – The observed and recorded materials were analyzed and grouped according to their nature. This allowed them to be linked to the categories of significant learning and to determine their purposes, thereby classifying the sets of practices.

Testing in courses taught by the author – Activities previously implemented in the author's classes were modified based on other categories of Fink's Taxonomy (2007), documented, and subsequently analyzed.

Testing in creative workshops – The concept of the Meaningful Learning Keychain was presented and tested in workshops offered by ESPM to higher education teachers at the institution, as well as to high school teachers from public and private schools. In these workshops, possibilities for application were discussed, and activities were developed to be tested later by the participants.

4 The Meaningful Learning Keychain: Application

We observed that, in addition to modifying pedagogical activities by simply inserting new stimuli related to the categories of Fink's Taxonomy (2007), it was possible to identify critical moments in each subject and develop specific and strategic activities for those points. Such activities can be intentionally incorporated into the teaching plan, for example:

The initial moments of a subject can be an opportunity to propose integration-oriented activities, predisposing students to what will follow. These are **activation activities** that may relate to Application (by introducing a relevant aspect of the subject), Learning How to Learn (if they spark interest in learning more about something), or Human Dimension (if they involve the development of something concrete).

Advanced practical activities, such as laboratory or field work – usually carried out after a theoretical topic as a way of applying content – require a systemic view

ISSN 1984-1566 (on-line)

and creativity. These practices may be linked to the categories of Foundational Knowledge (through the content addressed), Application (through the real experience of using knowledge), and the Human Dimension – expressed here as personal fulfillment – (through the discovery of abilities and the achievement of goals). They function as **encouraging activities** because completing them satisfactorily fosters reflection, consolidates learning, and can introduce an element of play or gamification.

When two or more lessons address related content, they can be articulated through **structuring activities**, in which a task based on what was studied in the first lesson induces the need to understand the content of the next. This enhances the meaning of the content, activating categories such as learning how to learn (by encouraging students to seek the knowledge they lack), Application (through the use of what has been learned), and Integration (through connections between different areas of knowledge).

In subjects that teach project methodologies – where students are typically asked to create something using a method they do not yet fully understand – **shaping activities** help model their thinking process. They may involve analogies, comparisons between models, or analysis of similar cases, encouraging critical and analytical reflection. They relate directly to Caring (by promoting shifts in perspective) and Learning How to Learn (by helping students identify what needs to be deepened or adjusted).

Some activities can be created with the specific goal of moving students out of their comfort zones, breaking paradigms, dismantling certainties, and stimulating creative thinking. These are challenging practices that unsettle habitual references and patterns – **deconstructing activities** – which relate to the Human Dimension (through the challenge itself), and to Caring (by helping students overcome creative blocks and see things from new viewpoints).

Original works and **personal projects**: because they are connected to intrinsic motivations, they are naturally meaningful to students. Incorporating personal projects into the context of a subject allows five of the six categories of meaningful learning to be directly achieved: Learning How to Learn (through the

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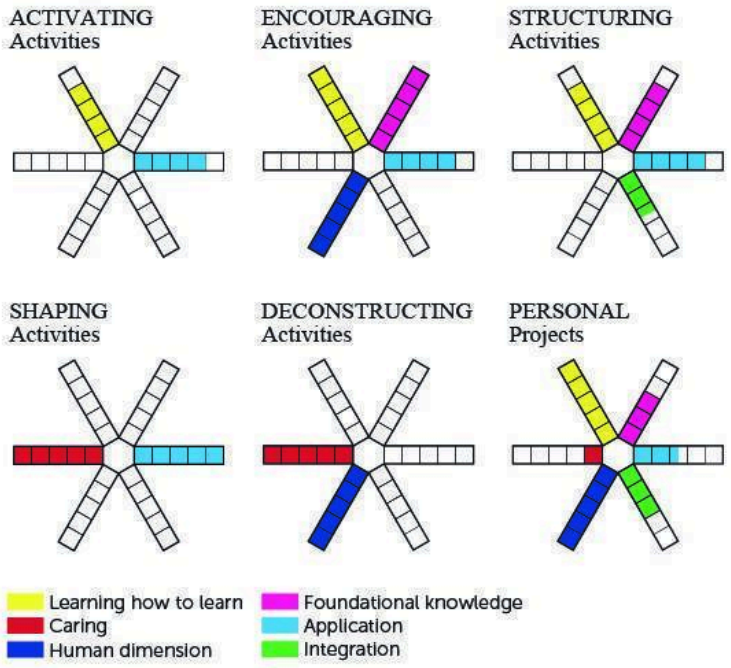
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

search for knowledge motivated by the project's challenge); Foundational Knowledge (through the need to draw on the subject's content); the Human Dimension (because it is their own project); Application (because it results in a real product or action); and Integration (because it brings together prior and interdisciplinary knowledge). Perhaps because they relate to so many categories, original activities were, among all the practices observed, those that generated the highest levels of engagement and enthusiasm from students.

Figure 3 presents a graphical representation of this categorization of strategic practices from the Keychain of Meaningful Learning, organized according to Fink's Taxonomy, allowing us to visualize how meaningful learning can occur in different directions depending on the strategies used and the intended objectives.

Figure 3 – Graphical Representation of the Analyzed Practices



Source: Beltrão (2017)

5 Proposition: Creating Active Classes Using the Meaningful Learning Keychain

Following the analogy that each category of Fink's Taxonomy (2007) can be

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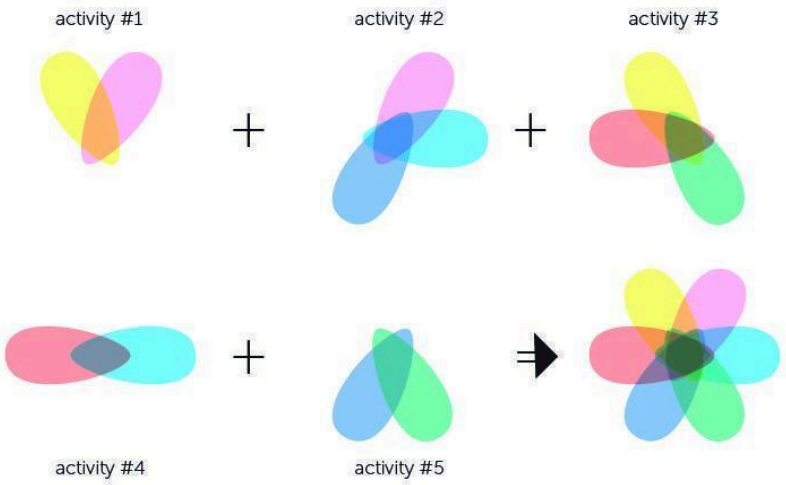
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

understood as a key for activating and engaging students – and considering that, within a class, students may be activated in different ways due to their varied learning styles, abilities, and intelligences (Gardner, 1995; Travassos, 2001) – we can infer that the more categories of significant learning are addressed throughout a course, the more activation keys will be employed, thereby increasing the likelihood of reaching a larger number of students.

Based on the learning objectives defined for any subject, it is possible to create a set of activities that encompasses the six categories proposed by Fink (2007), combining them strategically within the teaching plan, as illustrated in Figure 4. In doing so, we strengthen the creation of meaning, promote activation of the learning process, and foster student engagement at different levels.

Figure 4 – The Meaningful Learning Keychain



Source: Prepared by the author (2023)

Planning lessons using different keys may involve combining active methodologies or applying a primary methodology supplemented by complementary pedagogical practices.

Each key may be selected intentionally to address critical points in a subject or to reach different learning styles, enabling better comprehension of that topic.

In a practical subject, for instance, where certain theoretical content has traditionally been met with student disinterest, we might employ a key of Application combined with a key of the Human Dimension. In other words, the theoretical

ISSN 1984-1566 (on-line)

content could be introduced alongside a challenging activity that demonstrates its practical use.

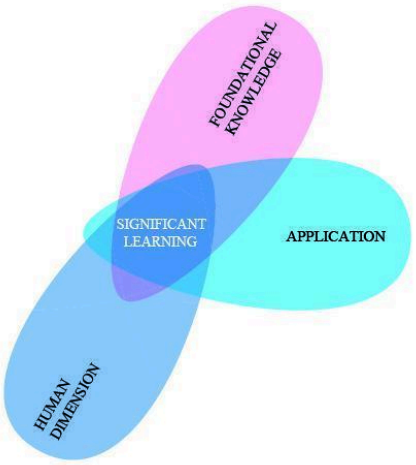
When testing this configuration in a project-based course, we obtained excellent results. At a certain stage, students were required to conduct interviews for the course. Under the traditional configuration, they would receive a lecture on interview techniques supported by the bibliography, followed by planning the interviews they needed to conduct. In this traditional model, students consistently demonstrated that they had not truly learned how to conduct interviews, and the outcomes were invariably poor.

Students' reception of this traditional configuration – the purely theoretical model – was marked by disinterest and apathy. In the configuration designed using the Meaningful Learning Keychain, we created a short, controversial text involving fictional characters portrayed by the teachers. After reading the text, students formed groups and interviewed the characters, who responded improvisationally to equally improvised questions. We then held a debate about the students' reflections on the information gathered during the interviews.

After a lively discussion, students concluded that they had collected a significant amount of conflicting information, had forgotten to ask key questions, and had, in some cases, influenced the responses. From that point forward, it was possible to conduct the lecture on interview techniques with strong enthusiasm and active participation from the students. As illustrated in Figure 5, they learned interview techniques (Foundational Knowledge), experienced firsthand the problems that arise when an interview is not properly planned (Application), and, in the next stage, were able to conduct excellent interviews in their projects based on what they had learned (Human Dimension).

REVISTA PEDAGÓGICA
Revista do Programa de Pós-Graduação em Educação da Unochapecó
ISSN 1984-1566 (on-line)

Figure 5 – Representation of the Practical Interview Activity



Source: Prepared by the author (2023)

In this example, if a creative activity integrated with another discipline had been carried out immediately after the interview practice – addressing the categories of Human Dimension and Integration – four of the six categories of significant learning proposed by Fink (2007) would have been addressed, reinforcing the Human Dimension, which would be present in both activities.

Concluding Remarks

Returning to our guiding question in light of the Meaningful Learning Keychain – "How can academic activities be created that enable reflection in the learning process, reducing the fear of error and judgment?" – we observed in our application tests that project students demonstrated behavior opposite to the apathetic rejection of theoretical content often seen in practical subjects. The learning objectives related to this content were instrumental and essential for developing the initial stages of design projects (interview techniques, context construction, and problem-solving). The activities created from the Keychain allowed students to act and reflect based on the results (Schön, 2000), experiencing and constructing knowledge from their own experiences rather than merely receiving information. The set of activities generated meaning for learning.

The Meaningful Learning Keychain, developed by Fink (2007), can be used as

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a strategic tool for planning subjects in any area of knowledge – whether in elementary, high school, or higher education – because it is not a methodology and does not challenge or invalidate existing methodologies or teaching materials.

It serves as a means of enhancing the creation of meaning in what is learned, as it seeks to address different categories of significant learning and, in doing so, reach students' varied abilities and intelligences.

The Keychain also contributes to rebuilding creative confidence, since one of the categories is the Human Dimension, associated here with personal fulfillment, which involves overcoming challenges. Activities that reach this category address the direct overcoming of fears, making students not only more predisposed to acquiring new knowledge (Ausubel, 1963) but also more creative in dealing with problem-solving and life situations (Kelley; Kelley, 2019).

Each teacher can create his or her own Keychain of meaningful practices to be selected as needed and applied specifically in their subjects whenever they recognize that a given point could be addressed more effectively in class. The Keychain can be used for complete course planning or to create focal points of interest by combining each teacher's activation keys with traditional teaching methodologies.

Finally, groups of teachers from the same institution could create shared and integrated practices based on the Keychain and record their individual practices as resources or tools available to other teachers, thereby creating a repertoire of pedagogical practices that could function as a toolbox of activities categorized according to the activation keys used, their function, or even their purpose, with activities for creation, analysis, research, among other possible categories. The practices proposed in these kits could be presented as reference structures for the institution, customizable according to each teacher's needs when planning their classes.

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