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Evaluation of Distance Learning Courses for Continuing Education of Healthcare Professionals: Integrative Review

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Abstract

Distance education (DE) is a continuing education strategy used to train professionals in the healthcare field. However, the scientific community points out that research on evaluative activities in this area is still necessary. The present study aims to identify in the scientific literature studies that have evaluated DE courses aimed at the continuing education of healthcare professionals and to identify the instruments or criteria used for educational evaluation. The Kirkpatrick Model was adopted as a reference for the evaluation due to its popularity and credibility among researchers in the field. The methodology adopted was a systematic literature review of the integrative review type. Among the inclusion criteria were studies dated up to the year 2022; works that evaluated reaction (Level I of the Kirkpatrick model); educational activities conducted through the internet; themes with a narrow interface with the human health area; and the target audience consisting of healthcare professionals who are already graduates. A total of 66 studies were selected. For each research, the following were identified: evaluation category, year, evaluation characterization of the educational action (validated instrument or not), target audience, course theme, evaluation level according to the Kirkpatrick model, type of approach adopted; and use of pre/post knowledge test. The most cited evaluation categories were Educational, General Aspects, and Design, while Ethics was the least referenced. Behavior and results evaluation (Levels III and IV of the Kirkpatrick model) are less commonly performed. Studies focused on DE evaluation in the healthcare field should be encouraged to promote investigations involving the construction of robust and standardized instruments, enabling result comparison.

Keywords: Distance learning. Review. Healthcare education.

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Avaliação de Cursos EaD para a Educação Continuada de Profissionais da Área da Saúde: Revisão Integrativa

Resumo

A educação a distância (EaD) é uma estratégia de educação continuada utilizada para promover a capacitação de profissionais na área da saúde. No entanto, a comunidade científica aponta que pesquisas de atividades avaliativas nesta área ainda são necessárias. O objetivo do presente trabalho é identificar, na literatura científica, estudos que realizaram a avaliação de cursos EaD, voltados à educação continuada de profissionais da área da saúde e apontar os instrumentos ou os critérios utilizados para a avaliação educativa. Para isso, foi adotado o Modelo de Kirkpatrick como referência para a avaliação, em função da sua popularidade e credibilidade entre pesquisadores da área. A metodologia adotada foi a revisão bibliográfica sistemática do tipo revisão integrativa. Entre os critérios de inclusão, foram considerados estudos datados até o ano de 2022; trabalhos que realizaram a avaliação da reação (Nível I do modelo Kirkpatrick); ação educativa realizada via internet; temática apresentando uma interface estreita com o campo da saúde humana e o público-alvo formado por profissional de saúde já graduado. Ao todo, foram selecionados 66 estudos. Para cada pesquisa, foram identificados: a categoria de avaliação; o ano; a caracterização da avaliação da ação educativa (instrumento validado ou não); o público-alvo; a temática do curso; o nível de avaliação segundo o modelo Kirkpatrick; o tipo de abordagem adotado; o uso de pré/pós teste de conhecimento. As categorias de avaliação mais citadas foram a Educacional, Aspectos Gerais e Design, enquanto a menos referendada foi a Ética. A avaliação de comportamento e resultados (Nível III e IV do modelo Kirkpatrick) são menos realizados. Estudos voltados à avaliação da EaD na área da saúde devem ser incentivados, propiciando investigações que envolvam a construção de instrumentos robustos e padronizados, a fim de possibilitar a comparação de resultados.

***Palavras-chave**: Educação a distância. Revisão. Educação em saúde.*

1. Introduction

Given the constant changes in the world of work in the health sector, where everything happens quickly, it is important to establish strategies to facilitate access to new knowledge. In this sense, Distance Education (DE) has gained ground, becoming a good alternative for promoting continuing education, since it has advantages inherent to the process, such as convenience, flexibility, interactivity and equity (JOSE; LEITÃO FILHO; MENEZES, 2009). Distance education is not just about using technology and/or information, but about educating people for life and the world of work. In the field of health, distance education is a tool that can be used to train and update professionals, contributing to the promotion of human resources in health and impacting on the quality of care provided (CAVICHIOLI, 2021).

With regard to the issue of quality, Carlini and Ramos (2009) emphasize that the process of evaluating distance learning courses must be continuous, in order to identify successes and facilities, as well as errors and difficulties. Ruhe and Zumbo (2013) state that there are many evaluation techniques and tools for

distance learning, which have their own characteristics and can cover the description of distance learning course environments, student characteristics, as well as cost and institution structures. Among the various models presented by this author is the Kirkpatrick and Kirkpatrick Model (2006).

The Kirkpatrick (1999) training evaluation model is widely known and used in various contexts, including the health sector (CURRAN; FLEET, 2005; SANTOS, 2016; GAGNE et al., 2019; HUGHES et al., 2016; MUTALIB; AKIM; JAAFAR, 2022; PIMENTA, 2022). Its popularity is linked to the fact that it simplifies the process of evaluating education and/or training actions. It also makes it possible for evaluative actions to be understood by all categories of people and not just specialists. The model proposes the use of simple language to deal with the various results and how information on this data can be obtained. It also makes it possible to draw conclusions about the need to continue or stop learning and assess the contribution of the training to the organization's purposes (BARAÇAS, 2017; SILVEIRA, 2023).

More specifically, the Kirkpatrick model (1994) establishes that training evaluation takes place on four levels: reaction, learning, performance on the job and at the organizational level, and results, described as follows: Level I - Reaction: assesses whether the participants react favourably to the learning event; Level II - Learning: assesses what knowledge, skills and attitudes the participants acquired after taking part in the learning event; Level III - Behaviour: assesses whether the participants changed their behaviour, i.e. whether they applied what they learned during the training when they returned to work; Level IV - Results: assesses the impact on the organization from the change in the participant's behaviour after taking the training. Based on these four areas, the Kirkpatrick model offers significant contributions to the theory and practice of evaluation.

In the health context, there are records of initiatives dealing with the evaluation of continuing education actions in distance learning. André (2023) reviewed the research methods and instruments used to evaluate interprofessional education strategies for shared decision-making in pharmacotherapy. Curran and Fleet (2005) conducted a study on research that indicated evaluative results reported for web-based continuing medical education, with the inclusion criterion being the indication of at least one level of evaluation described by Kirkpatrick (1994). Wutoh, Boren and Balas (2004) carried out a review study to find out whether web-based continuing medical education (CME) interventions reflected on doctors' performance and healthcare outcomes. Other researchers have studied the evaluation of DE for doctors (LEEUW et al., 2019a; 2019b; OLUWADELE; SINGH; ADELIYI, 2023).

In the meantime, the aim of this study was to identify, in the scientific literature, studies that have evaluated distance learning courses aimed at continuing education for health professionals and to identify the instruments or criteria used to evaluate the educational actions carried out.

2. Methodology

This is a systematic literature review of the integrative review (IR) type. The integrative review makes it possible to synthesize multiple studies, leading to general conclusions on a given subject and the identification of gaps that need to be studied, which makes it possible to outline a scenario on the scientific production of a given problem, as well as to know the evolution of the theme over time (MOREIRA, 2014). The IR stages carried out were: 1) Identification of the topic and selection of the research question; 2) Establishment of inclusion and exclusion criteria; 3) Identification of the pre-selected and selected studies; 4) Categorization of the selected studies; 5) Analysis and interpretation of the results; 6) Presentation of the review/synthesis of knowledge (BOTELHO; CUNHA; MACEDO, 2011).

The study's guiding question was: "Which studies referenced in the scientific literature evaluate distance learning courses aimed at continuing education for health professionals, and which evaluation instruments or categories are used?". To complement the research, a second study question was defined:

Of the studies listed, which levels of the Kirkpatrick model are used to evaluate educational actions?

The inclusion criteria were primary studies, with no defined starting date, published up to 2022, in English, Portuguese and Spanish, available free of charge and with full text, which addressed the research's guiding question. As eligibility criteria, it was defined that the articles should necessarily include the evaluation of the reaction, i.e. Level I of the Kirkpatrick and Kirkpatrick (2016) model, carried out by the course participants, presenting the questions or rubrics and/or evaluation criteria and, preferably, an indication of the instrument used for this purpose. In addition, the courses would be conducted online, synchronously and/or asynchronously, preferably using a virtual learning environment. The theme of the courses should have a close interface with the area of human health, and could include health management (for example, an online course in the area of veterinary medicine or a teacher training course would not be suitable).

The Kirkpatrick model indicates that the evaluation should start with Level I, and then go through the other levels sequentially, depending on the organization's time and budget. As you move up the levels, the assessment becomes more difficult and requires more time. In addition, there is the argument that if the professionals carrying out the training do not enjoy the training activity, learning will no longer take place. Baraças (2017) points out an important fact reported by the American Society for Training and Development: training is evaluated in 78% of cases based on reactions, 32% on learning, 9% based on behavior and 7% on results.

The target audience should predominantly be health professionals with a degree. Thus, studies involving subjects or courses aimed exclusively at non-graduates, i.e. students in higher education in the health area, were not selected. Duplicate articles, review studies, letters, abstracts, books, case report studies, dossiers, theses and dissertations were excluded. Papers that dealt only with the evaluation of learning and/or work-related behavior change were also excluded, as were those that involved the evaluation of courses by specialists in the field, but had not been carried out or evaluated by the course participants.

The data was searched in two stages: between June and July 2021, for articles published up to 2020, and between January and February 2023, for studies published between 2020 and 2022. The following databases were used: Medline (via PubMed®); the Virtual Health Library portal (BVS, not considering the Medline database); the Scientific Electronic Library Online portal (SciELO); Scopus and Web of Science. For the search strategies, the controlled descriptors of the Health Sciences Descriptors (DeCS) were considered: continuing education, distance education and evaluation. Variations of the controlled and non-controlled terms were also used, as well as their correspondents in English (Medical Subject Headings/ Mesh): Continuing Education, Education, Distance, Learning, Distance, Online Learning, Evaluation. The search expressions were used by combining these descriptors, using the Boolean operators "AND" (to locate studies on two or more topics, i.e. intersection) and "OR" (in this case, for synonyms) (PEREIRA; GALVÃO, 2014). The results obtained were exported to the Endnote web reference manager.

Prior to analyzing the articles, ten categories were listed for evaluating courses - Level I (reaction) of Kirkpatrick model, based on the following studies: Khan (2001); Castillo-Alvarez et al. (2006); Chaney (2009); Rizzatti Junior (2009); Rodrigues and Peres (2013); Selby et al. (2015); Schwab-Reese (2020); Peixoto Filho and Oliveira (2021) and Trindade et al. (2022). The categories are: 1) General Aspects; 2) Institutional; 3) Technological; 4) Design; 5) Ethics; 6) Evaluation; 7) Educational; 8) Student actors; 9) Instructor/teacher actors; 10) Tutor actors. In other words, the categories were established and a description was given of what each one meant. Each study evaluated could present evaluation items belonging to one or more evaluation categories (AC), described in Table 1 (Supplements).

After identifying and excluding duplicate articles, the first phase of study selection was carried out, which consisted of reading the title, abstract and keywords. Papers that were easily identified as not adhering to the research theme were excluded. Next, in phase 2, the article was read in its entirety,

applying the eligibility criteria. The next phase consisted of re-reading the selected studies in depth, organizing a data collection form, which includes: year, authors, journal, title, keywords, characterization of the evaluation of the educational action (validated instrument or not; target audience of the course and area of the course; level of evaluation according to the Kirkpatrick model (2016); type of approach adopted (qualitative/quantitative); use of pre/post knowledge test and timing of this test. The scheme of this selection process is shown in Figure 1.

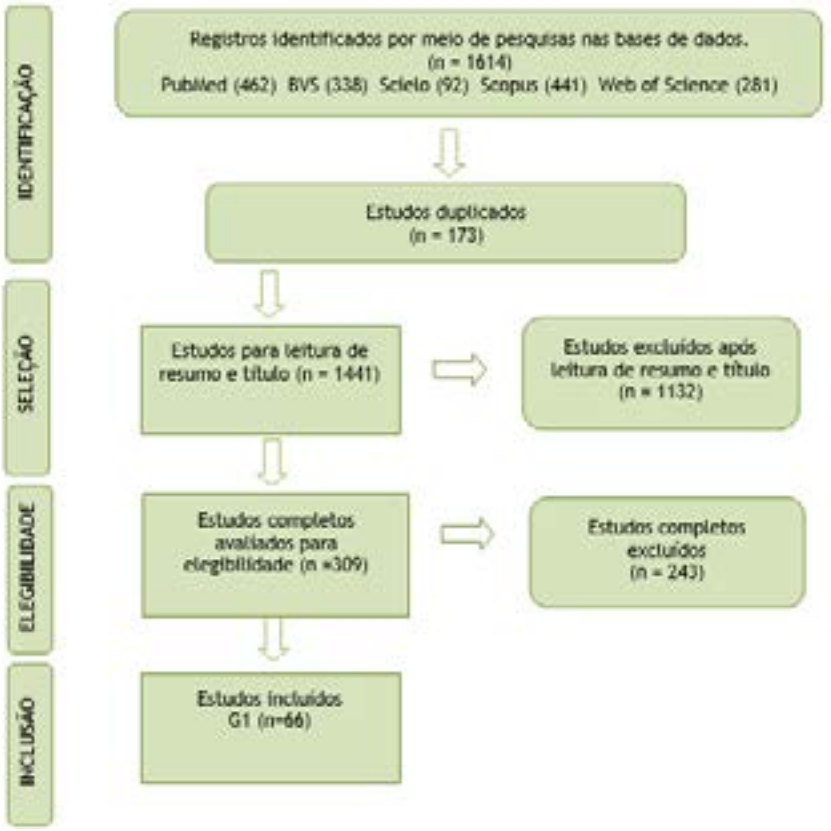

Figure 1: Study Selection Process
Source: Authors' image (2024).

3. Results and Discusion

This review included 66 studies, which are identified in the supplementary file (Table 2- Identification and general characterization of the IR studies). The articles resulting from this review were published between 2000 and 2022. We chose to work with an exhaustive search of the literature, "which means that it may comprise the search for research articles from 20 to 30 years ago or more, in order to find the origins of practice in relation to the phenomenon under study" (CROSSETTI, 2012, page 9).

The target audience for the courses was predominantly nursing professionals (32 - 48%), followed by doctors (25 - 37.88%), health professionals (9 - 13.64%), pharmacists (8 - 12.12%), psychologists (4 - 6.06%), among others. It can be seen that the areas were very diverse. In all the studies, the approach was quantitative. In 38 cases (57.58%), quantitative and qualitative analysis was used to evaluate the course and/or program, and these were predominantly descriptive studies (N1; N3; N6; N7; N8; N9; N10; N11; N12; N14; N15; N16; N17; N18; N22; N24; N28; N30; N32; N35; N36; N37; N38; N42; N45; N46; N47; N48; N49; N50; N51; N52; N53; N56; N59; N60; N65; N66), with a survey of data and a search for the reason for this data (DALFOVO; LANA; SILVEIRA, 2008). These studies included questionnaires with closed and open

questions, so that the students could express their perceptions of the course in their own words (MOREIRA, 2009), "making it possible to understand the most varied particularities of individuals" (DALFOVO; LANA; SILVEIRA, 2008, p. 7). The work by Brown and Bullock (2014)/N32, which adopted a mixed approach, is differentiated by the use of focus groups, telephone conversations and e-mails, rather than questionnaires and/or scales like the other studies.

The use of questionnaires is an integral part of the clinical practice of health evaluation and research (COLUCI; ALEXANDRE; MILANI, 2011). Scholars have developed this type of resource in the field of health and education (RODRIGUES et al., 2014; JOLY et al., 2015; ZERBINI; ABBAD; BORGES-FERREIRA, 2012; TRINDADE et al., 2022). However, the quality of the results investigated is linked to the appropriate use of the instrument used. Thus, one of the main challenges of evaluation is to obtain accurate, reliable and valid measures, considering that the use of validated instruments favors the credibility of the study (ELLIOT, 2012; COLUCI; ALEXANDRE; MILANI, 2015; SOUZA, 2017).

In this IR, thirteen studies (19.70%) mention the use of a validated instrument to evaluate the course, such as a questionnaire and/or Likert scale, with the number of possible answers varying (N5; N12; N13; N17; N22; N23; N25; N27; N30; N31; N37; N48; N55). Three studies (4.55%) (N13, N22 and N37) validated the data collection instrument, based on the assessment of specialists who were part of the team of the respective courses and on the execution of specific statistical calculations, favoring the internal validity of the study. Another 10 (15.15%) refer to an instrument validated in a previous study or to works that served as a reference for the creation of the questionnaire and/or scale, as follows: Listovsky et al.(2022)/N5, Kolcu, Öztürkçü and Kaki (2020)/N12, Inmaculada et al. (2019)/N17, Santos et al. (2018)/N23, Marin et al. (2017)/N25, Cabral et al. (2017)/N27, Lockman-Samkowiak et al. (2015)/N30, Souza et al.(2015)/N31, Quelhas; Lopes and Ropoli (2008)/N48 and Lin, Chien and Chang (2006)/N55. The aim of this study was not to analyze the quality of the questionnaires used in the reaction evaluations (Level 1), regardless of whether or not there was any indication that these instruments had been validated.

In the study by Listovsky et al. (2022)/N5, the evaluation carried out follows the research by Rubio (2003) and Ortiz-López, Olmos-Migueláñez and Sánchez-Prieto (2021). Rubio (2003) reviews some evaluation models - Slyke, Kittner and Belanger's Systemic Model (1998); Marshall and Shriver's Model of the Five Levels of Evaluation (McARDLE, 1999) and Kirkpatrick's Model of the Four Levels (1994) - and presents two evaluation approaches: partial evaluation, which emphasizes certain aspects of e-learning (materials, technological resources, teaching, among other aspects) and global evaluation, which uses quality management models and the practice of comparative evaluation. Ortiz-López, Olmos-Migueláñez and Sánchez-Prieto (2021) present a validated instrument (content validation), made up of four main dimensions (Quality of the institution; Quality of the teaching; Quality of the learning system or platform; Evaluation of the quality of the program), 14 sub-dimensions and a total of 80 indicators that attempt to evaluate each relevant quality factor in e-learning. (available at https://docs.google.com/document/d/1BQxjD3x02eTiQBbWOHP_1yfC61Dps0wpSelmpDzFG2M/edit?tab=t.0#heading=h.31is5). Kolcu, Öztürkçü and Kaki (2020)/N12 use the e-Learning Process Satisfaction Scale, made up of 29 questions. This instrument is based on Gülbahar (2012), who validated the "Satisfaction Scale for the e-Learning Process" with four dimensions: 1) Delivery and Usability; 2) Teaching Process; 3) Teaching Content; 4) Interaction and Evaluation.

Inmaculada et al. (2019)/N17 adapted the MML methodology (Logical Framework Methodology) (ALDUNATE; CÓRDOBA, 2011), using a questionnaire composed of 30 closed questions, which addressed four dimensions associated with the quality of distance programs, mediated by a virtual environment: 1) tutorial work; 2) handling of procedures, requirements and complaints; 3) operation of virtual classrooms; 4) design and distribution.

The N23 study (SANTOS et al., 2018) used the Constructivist On-Line Learning Environment Survey (COLLES) instrument, which consists of 24 questions grouped into six dimensions: relevance, critical reflection, interaction, tutor support, peer support and understanding. It is a validated questionnaire, which is embedded in the Moodle platform (https://docs.moodle.org/403/en/Survey_settings#ATTLS_-_

Attitudes_to_Thinking_and_Learning_Survey (CUNHA-ARAÚJO *et al.*, 2014; MALLMANN, 2009).

Marin et al. (2017)/25 used a tool with 30 statements, divided into six dimensions: 1) use of the Moodle platform; 2) material made available; 3) tutor participation; 4) face-to-face meetings; 5) completion of the course work; 6) practical application of knowledge. These items were classified according to an instrument frequently used to evaluate health services, consisting of the triad "Structure, Processes and Results", proposed by Donabedian (1984).

Cabral et al. (2017)/N27 followed the Kirkpatrick Method to guide the evaluation of the course, covering level 1 and level 2. The authors used a questionnaire adapted from Giarola et al. (2015), with 31 statements, which were validated by statistical methods, distributed in the categories of interaction, didactic aspects, tutor support, social support, access to and interpretation of information, relevance and motivational factors.

The evaluation of educational action carried out by Lockman-Samkowiak et al. (2015)/N30 was guided by the work of Abruzzese (1992), who presents the concept of evaluation through a triangle made up of four levels, in which the base would be the "evaluation of processes", followed by the "evaluation of results"; the "evaluation of content" and, at the top, the "evaluation of impact". A questionnaire with 43 questions was used to evaluate the course, 11 of which dealt with the design and delivery of the educational module, covering the first two levels of Abruzzese (1992).

The studies by Souza et al. (2015)/N31 evaluated courses using the field of Social and Work Psychology as a guiding framework. In their study, these authors add the analysis of components of the work environment, studied by Borges-Andrade (1982), to the four levels described by Kirkpatrick, which are articulated to the components, organizational support and transfer support, as well as the impact of training on work (ABBAD, 1999). A 52-item course evaluation questionnaire was therefore created and validated using statistical procedures. It includes the variables for three levels of evaluation - reaction, learning and results (MIRA, 2010).

Quelhas, Lopes and Ropoli (2008)/N48 adapted the questionnaire proposed by Ribeiro and Lopes (2006). The instrument has positive and negative statements, covering the following aspects of authorship: general content information, presentation of information, reliability of information and educational project. For this study, the instrument was statistically validated.

Lin, Chien and Chang (2006)/N55 proposed a questionnaire with 29 questions to evaluate educational action, which was created from the perspective of the D&M information system success model (DELONE; MCLEAN, 2003). This instrument has three constructs: system quality, information quality and service quality. The quality of the system has the variables ease of use, connection, student interface and learning community. Information quality has the variables content, layout and cognitive absorption. Finally, the service variables are reliability, responsiveness and personalization.

It can be seen that the studies described above have different evaluation dimensions and use different benchmarks. This diversity makes it difficult to compare the results. Therefore, 10 evaluation categories were created to make it easier to identify similarities and/or evaluation patterns between the studies. The most frequently cited evaluation categories in the studies are CA Educational, CA General Aspects and CA Design. In other words, in principle, the reaction to the educational action is assessed, as a rule, by the student's general satisfaction with the activity carried out, the perception of the pedagogical aspects provided and carried out, as well as the characteristics of the environment and the resources added to the learning environment used. Technological CA and Evaluation CA are the most frequently cited.

Few studies cited CA Ethics: N21 (ORTEGA et al., 2018), N27 (CABRAL et al., 2017) and N52 (DAVIES; HANNIGAN, 2007). In common, these studies present the nursing public, but from different origins,

respecting the proportionality and regionality of each one. The distance learning course in the study by Ortega et al. (2018)/N21 was offered to nursing professionals from all over Latin America and the Caribbean, which is in line with the concern to evaluate these aspects. Cabral et al. (2017)/N27 worked with professionals from the city of Porto Alegre (RS, Brazil) and the entire metropolitan region, which encompasses 31 municipalities. Davies and Hannigan (2007)/N52 addressed the issue of offering a course in disaster assistance and protection, the result of a joint action by three Higher Education Institutions (HEIs) across Europe, which had Finnish, Greek, Irish, British and German nurses as course participants.

In distance education, tutoring is extremely important, as it is relevant to the student's studies and the construction of knowledge, as well as to the proper development of the course. The tutor plays various roles, such as administrative, organizational, social, technological and pedagogical (MATTAR, 2012; JUNQUEIRA, 2018; PEREZ; PEREZ, 2018; FRAGA; DECARLI; BOLL, 2021; SANTOS; 2022; TANI, 2023). Some studies show that tutoring has a strong influence on dropout in distance learning courses (BIZARRIA et al., 2015; GOMES; POSSAMAI, 2019). Other studies have developed scales to assess tutoring activity (ZERBINI; ABBAD; BORGES-FERREIRA, 2012; GARCIA; SILVA, 2016). However, in this IR, the evaluation of tutoring in course evaluation was identified in ten studies (15.15%%) (N11; N17; N18; N23; N24; N29; N41; N45; N58; N61). Of these, two (N17; N23) studies mention the validation of the course evaluation tool and one (N23) refers to Kirkpatrick model.

With regard to student assessment, in both distance and face-to-face learning, there are three types of assessment - diagnostic, formative and summative - each with a specific purpose. Diagnostic assessment makes it possible to understand or identify what the student knows in terms of content and/or skills and/or requirements they should know or have in order to participate adequately in the process of new learning. Formative assessment, on the other hand, is concerned with helping the student to understand the evolution of their knowledge, pointing out significant learning points and possible weaknesses that may be occurring during the learning process rather than afterwards. Summative assessment is carried out at the end of the educational activity and serves to examine whether the student is keeping up with the teaching and learning processes, i.e. it measures the student's learning and has a classificatory function (PASSOS, 2020; SOARES; MASSUGA; GONZAGA, 2022; ROSSIT, 2022).

Curran and Fleet (2005) searched for studies that indicated evaluative results reported for web-based continuing medical education, with the inclusion criterion being the indication of at least one level of evaluation described by Kirkpatrick. The 31 studies resulting from the author's work revealed that 25 (80.6%) included evaluations of student satisfaction (Level I); 16 (51.6%) studies covered the evaluation of learning outcomes (Level II) and two (6.5%) studies evaluated performance change in clinical practice (Level III). There were no studies (0%) that reported any patient evaluation or health outcomes (Level IV). With regard to learning assessment (Level II), the author reports that the majority of studies are based on pre/post-test study designs, in which, in general, there is an increase in the success of the post-test result compared to the pre-test. However, the aforementioned study also pointed out that some researchers have described other teaching-learning strategies, such as web-based review of learning material, combined with e-mail discussions, asynchronous computer conferences or the use of cases between course participants, to be used in discussions, with the help of facilitators. For Level III, the two surveys based on self-reporting methods indicated significant changes in the participants' practices.

For this IR, one of the inclusion criteria for the articles was the need for the study to cover Level I of Kirkpatrick's model. In order to obtain a broader mapping of studies on the evaluation of distance learning courses for continuing education, it was decided to identify the other levels of the Kirkpatrick model. For Level II (learning), 48 studies were obtained (72.73%); 33 articles for Level III (behavior change) and only four (6.06%) for Level IV (results).

Fifty percent of the studies resulting from the IR mentioned the use of pre/post-tests to assess knowledge (N4; N8; N10; N11; N12; N13; N16; N18; N19; N20; N21; N26; N27; N29; N33; N36; N37; N38;

N39; N41; N42; N43; N44; N45; N50; N51; N54; N57; N59; N60; N61; N63; N66). In these contexts, the majority aimed to identify whether there was a difference (in the expectation of improvement) in results. However, the pre-test can also be used as a diagnostic assessment (MATTAR, 2012) and as a post-test, as part of the summative assessment, in the situation where it is used to measure student learning. The studies that did not use pre/post-tests to assess knowledge used exercise proposals that could be carried out individually, often as a resource of the learning environment itself (quizzes with multiple choices, short answers, true or false, among others). In addition, the works also mention activities that involved reflection and problematization of the real world, which could promote the sharing of ideas and opinions among the course participants, under the supervision of and with feedback from tutors, characterizing a formative assessment.

With regard to behavioral assessment (Level III), 27 articles (40.9%) asked participants some kind of question. In most cases, this data came from the perception of the course participants, who reported that they intended to change their own practice or that they felt able and confident to apply the content and/or knowledge they had learned in the educational actions in their work environment. Of these, nine studies carried out a follow-up survey, ranging from 3 to 18 months. However, it is recommended that the behavioral assessment be carried out at more than one point in time, considering that subjects who take part in training may change their behavior immediately after the educational action; others, after some time; there are also those who do not change their behavior (CUSTÓDIO et al., 2021).

In this sense, Wutoh, Boren and Balas (2004) suggest that subjective reports of changes in the health professional's behavior should be confirmed by reviewing medical records or other objective measures. Shallcross et al. (2021)/N6 make a caveat, mentioning that some doctors reported that they did not intend to change their clinical practice, as they were already aligned with the information presented in the educational action or did not consider it relevant to take the course. Results like these, although important, are not widely disseminated. In this sense, Romiszowski (2009) proposes that researchers consider and disseminate data on aspects that have created problems in projects and led them to fail. The author recommends studying both successful cases and those that did not achieve the expected results. To this end, he argues that "[...] in the field of educational technology and distance learning, for every successful project there is at least one problematic one. Should we have the luxury of ignoring half of the existing research data?" (ROMISZOWSKI, 2009, p. 413).

Level IV (results) assesses the effects achieved in the work environment, i.e. it identifies whether changes have occurred in organizations as a result of employee participation in training actions, with regard to permanent health education actions (courses). The numbers found for this evaluative action concern two articles, which corroborates what is referenced in the literature (RUSCIOLELLI et al., 2020; REIO et al., 2017; PIMENTA, 2022; MUTALIB; AKIM; JAAFAR, 2022), i.e. that it is difficult to carry out and/or report. In the systematic review conducted by Mutalib, Akim and Jaafar (2022), to evaluate the effectiveness of distance learning during the COVID-19 pandemic among undergraduate health science students, no study pointed to the Kirkpatrick assessment for Level IV. Gagne et al. (2019) conducted a systematic review of the literature on microlearning in health professions education, with the aim of listing key concepts, characterizing microlearning as an educational strategy and evaluating the pedagogical results experienced by health professions students. This study found that 94% of the studies carried out Level I assessments; 82% conducted Level II assessments; 29% measured student behavior (Level III) and none of the studies assessed the highest level of learning outcomes.

Hsu et al. (2014)/N35 developed continuing online courses in nursing care and applied a care behavior questionnaire to both nurses and patients. Wilson et al. (2013)/N37 describe the development, implementation and evaluation of a distance continuing education program for healthcare professionals in clinical research management roles. To evaluate the results, a survey was carried out with the supervisors of the professionals who took the courses.

The results of health education must be evaluated. Corroborating Silveira (2023, p.75), the act of evaluating educational actions "promotes reflection and analysis of the process, verifying whether the intended objectives are being achieved and being able to re-evaluate the methodological path". The author also reports that although some researchers have used Kirkpatrick's scale to evaluate educational actions in the health area, they have not described the instrument. In this IR, in all the studies listed, it is possible to identify the evaluation questions or models used.

4. Conclusion

The purpose of this study was to identify studies in the scientific literature that have evaluated distance learning courses aimed at continuing education for health professionals and the evaluation instruments or categories used for this purpose. This article differs in that it covers courses aimed at continuing education for various professionals in the field, and is not restricted to a single area of health.

This study adopted the Kirkpatrick Model as a reference for the evaluation, considering its popularity and credibility among researchers in the field. In addition, it was decided to identify Level 1 (reaction) as a priority, as it is the most widely used assessment, according to the literature. In addition, it was possible to indicate the evaluation categories most referenced in scientific papers on the evaluation of distance learning courses for continuing education in the health sector.

There is no single standard for evaluating distance learning courses. This process encompasses several variables - teachers, students, support staff, teaching objectives and content, learning activities, virtual learning environment, bibliographic material, student support, ethics, infrastructure, among others.

It should be noted that this study did not consider the quality of the questionnaires used in the reaction evaluations (Level 1, Kirkpatrick model), nor did it identify the instruments for distance learning evaluation that go beyond the scope of reaction to the course, such as scales/questionnaires for motivational strategies for learning or learning or cognitive styles. However, the analysis carried out considered the Kirkpatrick evaluation model, which made it possible to see that the evaluation of behavioural changes in the workplace and the contribution of educational action to improving results in organizations are still not widely carried out or disseminated.

The evaluation of reaction as the main tool for evaluating educational actions, focusing on the perception of the course participants, pointed to the categories of educational evaluation, design and general aspects as predominant. At the learning level, there is still a great deal of use of pre-tests and post-tests to measure learning. Furthermore, as we move on to the behavioral and results assessment levels, their use is drastically reduced, as well as assessments focused on the students' perception of the possible use of the knowledge acquired.

In this IR, many studies show internal validity, i.e. the results observed represent the truth for the population restricted to the study, which may be a reflection of the objective of the work itself, considering that it was not the object of the investigation to identify research into the validation of questionnaires and/or scales for the evaluation process of distance learning courses for training health professionals. In this sense, it is clear that it is very useful to mobilize researchers to study and build evaluation tools for distance learning courses aimed at training health workers, based on validated references and procedures that make them robust and reliable, so that they can be used in various distance learning contexts in the health area.

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Referências Bibliográficas

ABBAD, G. S. **Um modelo integrado de avaliação de Impacto do Treinamento no Trabalho** - IMPACT. Orientador: Jairo Eduardo Borges-Andrade. 1999. 271f. Tese (Doutorado em Psicologia) - Universidade de Brasília, Brasília, 1999.

ABRUZZESE, R. S. **Nursing Staff Development**: Strategies for Success. St Louis, MO: Mosby, 1992.

ALDUNATE, E.; CÓRDOBA, J. **Formulación de programas con la metodología del marco lógico**. Santiago, Chile: CEPAL, 2011. Disponível em: https://repositorio.cepal.org/items/d14c5adc-ab09-47e0-8ed-0-ff4445aadb22 - Acesso em: 22 mar. 2024.

ANDRÉ, A. L. Avaliação da educação interprofissional para a tomada de decisão compartilhada em farmacoterapia: uma revisão de escopo sobre métodos e instrumentos. **Interface**, Botucatu, v. 27, p. e220497, 2023. DOI: https://doi.org/10.1590/interface.220497

BARAÇAS, A. R. C. **Avaliação da Formação Segundo o Modelo de Kirkpatrick.** 2017. 54 f. Dissertação (Mestrado em Gestão de Recursos Humanos) – Universidade de Lisboa, Lisboa, 2017.

BIZARRIA, F. P. A.*et al*. Papel do tutor no combate à evasão na EAD: percepções de profissionais de uma instituição de ensino superior. **Revista de Educação, Ciência e Cultura**, Canoas, v. 20, p. 85, 2015.

BORGES-ANDRADE, J. E. Avaliação somativa de sistemas instrucionais: integração de três propostas. **Tecnologia e Educação**, [s.L.], v. 11, n. 46, p. 29-39, 1982.

BOTELHO, L. L . R.; CUNHA, C .C. A.; MACEDO, M. Método da revisão integrativa nos estudos organizacionais. **Gestão e Sociedade**, Belo Horizonte, v. 5, n. 11, p. 121-136, mai./ago. 2011. Disponível em: https://ges.face.ufmg.br/index.php/gestaoesociedade/article/view/1220/906 - Acesso em: 11 jul. 2024.

CARLINI, A. L.; RAMOS, M. P. A Avaliação do curso. *In*: LITTO, F. M.; FORMIGA, M. (Orgs.). **Educação a distância**: o estado da arte. São Paulo: Person Education, 2009. p. 161-165.

CASTILLO-ALVAREZ, T.*et al.* Evaluación de satisfacción del módulo de autoenseñanza para el estudio del sedimento urinario en una plataforma tecnológica (e-aula). Educación médica, Barcelona, v. 9, n. 4b, p. 212-220, dez. 2006.

CAVICHIOLI, F. C. T. *et al*. Educação continuada e metodologias ativas em cursos a distância em enfermagem: revisão integrativa da literatura. **Nursing**, São Paulo, v. 24, n. 276, p. 5670-5685, maio 2021. DOI: https://doi.org/10.36489/nursing.2021v24i276p5670-5685

CHANEY, B. H. *et al*. A primer on quality indicators of distance education. **Society for Public Health Education**, [S.l.], v. 10, n. 2, p. 222-231, nov. 2009.

COLUCI, M. Z. O.; ALEXANDRE, N. M. C, MILANI, D. Construção de instrumentos de medida na área da saúde. **Ciência e Saúde Coletiva**, Rio de Janeiro, v. 20, n. 3, p. 925-936, mar. 2015.

COLUCI, M. Z. O.; ALEXANDRE, N. M. C.; MILANI, D. Validade de conteúdo nos processos de construção e adaptação de instrumentos de medidas. **Ciência e Saúde Coletiva**, Rio de Janeiro, v. 16, n. 7, p. 3061-3068, jul. 2011.

CROSSETTI, M. G. O. Revisão integrativa de pesquisa na enfermagem o rigor científico que lhe é exigido. **Revista Gaúcha de Enfermagem**, Porto Alegre, v. 33, n. 2, p. 8-9, jun. 2012.

CUNHA-ARAÚJO. I. M. Z.*et al*. Avaliação da percepção dos alunos da disciplina de endodontia sobre o uso do ambiente virtual de aprendizagem (Moodle): uso do questionário de auto-avaliação COLLES. **Revista ABENO**, Porto Alegre, v. 12, n. 2, p. 163-169, mai. 2014.

CURRAN, V. R.; FLEET, L. A review of evaluation outcomes of web-based continuing medical education. **Med Educ**., Inglaterra, v. 39, n. 6, p. 561-567, jun. 2005. DOI: https://doi.org/10.1111/j.1365-2929.2005.02173.x PMID: 15910431.

CUSTÓDIO, I. L.*et al*. Nursing training on the administration of medication in pediatrics: an assessment of observed and self-reported behavior. **Revista Brasileira de Enfermagem**, Brasília, v. 74, n. 4, p. e202011882021, jan. 2021. DOI: https://doi.org/10.1590/0034-7167-2020-1188

DALFOVO, M. S; LANA, R. A; SILVEIRA, A. Métodos quantitativos e qualitativos: um resgate teórico. **Revista Interdisciplinar Científica Aplicada,** Blumenau, v. 2, n. 4, p. 1- 13, 2008.

DELONE, W. H.; MCLEAN, E. R. The DeLone and McLean model of information system success: a ten-year update. **Journal of Management Information Systems**, Filadélfia, v. 19, n. 4, p. 9-30, 2003.

DONABEDIAN, A. **La calidad de la atención médica:** definicón e métodos de evaluación. México: La Prensa Médica Mexicana; 1984.

ELLIOT, L. G. Definição e Finalidade. *In*: ELLIOT, L. G. **Instrumentos de avaliação e pesquisa**: caminhos para a construção e validação. Rio de Janeiro: Wak, 2012.

FRAGA, C. C.; DECARLI, C.; BOLL, C. I. Análise Textual da Produção Acadêmica sobre Processos de Tutoria no Âmbito da EaD. **EaD Em Foco**, Rio de Janeiro, v. 11, n. 1, p. e1239 jan. 2021. DOI: https://doi.org/10.18264/eadf.v11i1.1239

GAGNE, J. C. *et al*. Microlearning in Health Professions Education: Scoping Review. **JMIR Med Educ**., Toronto, v. 5, n. 2, p. e13997, jul. 2019. DOI: https://doi.org/10.2196/13997

GARCIA, M.F; SILVA, D. Criação e Validação da Escala de Avaliação da Prática do Professor Tutor. **Paidéia**, Santos v. 8, n. 13, p. 1-18, jan. 2016.

GIAROLA, E.*et al*. Ambiente Virtual de Aprendizagem: Um Estudo Sobre a Satisfação dos Estudantes de Administração da Universidade Federal de Lavras. In: SEGET - SIMPÓSIO DE EXCELÊNCIA EM GESTÃO E TECNOLOGIA, 21., 28 a 30 out 2015, Resende. Anais... Resende: AEDB, 2015. 15p. Disponível em: https://www.aedb.br/seget/arquivos/artigos09/502_EAD_Artigo.pdf - Acesso em: 11jul. 2024.

GOMES, M. P. C. A.; POSSAMAI, S. A tutoria frente à evasão em EaD. **Revista Extensão**, Palmas, v. 3, n. 1, p. 162-168, out. 2019. Disponível em: https://revista.unitins.br/index.php/extensao/article/view/1368 - Acesso em: 11 jul. 2024.

GÜLBAHAR, Y. Study of developing scales for assessment of the levels of readiness and satisfaction of participants in e-learning environments. **J Fac Educ Sci**, Ancara, v. 45, n. 2, p. 119-137, out. 2012.

HUGHES, A. M.*et al*. Saving lives: A meta-analysis of team training in healthcare. J Appl Psychol., Washingtonv. 101, n. 9, p. 1266-304, set. 2016. DOI: https://doi.org/10.1037/apl0000120 PMID: 27599089.

JOLY, M. C. R. A.et al. Competência de estudo para uma amostra universitária da área de exatas. **Psicol. Esc. Educ**., Campinas, v. 19, n. 1, p. 23-9, jan. 2015. Disponível em: https://www.scielo.br/j/pee/a/3GBHL4xvkGgp8B8Zn9KGbgD/?lang=pt# - Acesso em: 11 jul. 2024.

JOSE F.F.; LEITÃO FILHO, F. S. S.; MENEZES I. B. S. **Gestão do Conhecimento Médico**. Porto Alegre: Artmed, 2009.

JUNQUEIRA, E. S. **Tutores em EAD**: teorias e práticas. Fortaleza: Dummar, 2018.

KHAN, B. A framework for web-based learning. *In*: KHAN, B. (Ed.). **Web-based training**. Englewood Cliffs, NJ: Educational Technology, 2001. p. 75-98.

KIRKPATRICK, D. L. **Evaluación de acciones formativas**: los cuatro niveles. Barcelona: EPISE-Gestión, 1999.

KIRKPATRICK, D. L. **Evaluating Training Programs**: The Four Levels. São Francisco: Berrett-Koehler, 1994.

KIRKPATRICK, D. L.; KIRKPATRICK, J. D. **Evaluating training programs**: the four levels. 3. ed. São Francisco: Berrett-Koehler, 2006.

KIRKPATRICK, J. D.; KIRKPATRICK, W. K. **Kirkpatrick's Four Levels of Training Evaluation**: Association for Talent Development. Alexandria: ATD Press, 2016.

LEEUW, R. et al. How We Evaluate Postgraduate Medical E-Learning: Systematic Review. JMIR Med Educ., Canadá, v. 5, n. 1, p. e13128, abr. 2019b. DOI: https://doi.org/10.2196/13128

LEEUW, R.*et al*. Development of an Instructional Design Evaluation Survey for Postgraduate Medical E-Learning: Content Validation Study. **J Med Internet Res**., Canadá, v. 21, n. 8, p. e13921, ago. 2019a. DOI: https://doi.org/10.2196/13921

MALLMANN, E. M. Gestão de cursos de capacitação em EaD: potencialidade das ferramentas de pesquisa e avaliação. *In*: CONGRESSO INTERNACIONAL ABED DE EDUCAÇÃO A DISTÂNCIA, 15., 27 a 30 set. 2009, Fortaleza. **Anais**... Fortaleza: ABED, 2009. Disponível em: https://www.abed.org.br/congresso2009/CD/trabalhos/452009163839.pdf - Acesso em: 11 jul. 2016.

MATTAR, J. **Tutoria e interação em educação a distância**. São Paulo: Centage Learning, 2012.

MCARDLE, G. E. **Training Design and Delivery**. Alexandria, VA: American Society for Training and Development, 1999.

MIRA, V. L. **Avaliação de programas de treinamento e desenvolvimento da equipe de enfermagem de dois hospitais do município de São Paulo**. 2010. 226 f. Livre Docência (Pós-Graduação em Enfermagem) - Universidade de São Paulo, São Paulo, 2010.

MOREIRA, J. M. **Questionários**: teoria e prática. Coimbra: Almedina, 2009.

MOREIRA, L. R. **Manual Revisão Bibliográfica Sistemática Integrativa**: a pesquisa baseada em evidências. Belo Horizonte: Grupo Ănima Educação, 2014. Disponível em: https://biblioteca.cofen.gov.br/wp-content/uploads/2019/06/manual_revisao_bibliografica-sistematica-integrativa.pdf - Acesso em: 11 jul. 2024.

MUTALIB, A. A. A.; AKIM, A.; JAAFAR, M. H. A systematic review of health sciences students' online learning during the COVID-19 pandemic. **BMC Med Educ**., Londres, v. 22, n. 1, p. 524, jul. 2022. DOI: https://doi.org/10.1186/s12909-022-03579-1

OLUWADELE, D.; SINGH, Y.; ADELIYI, T. T. E-Learning Performance Evaluation in Medical Education-A Bibliometric and Visualization Analysis. **Healthcare (Basel)**, Suiça, v. 11, n. 2, p. 232, jan. 2023. DOI: https://doi.org/10.3390/healthcare11020232

ORTIZ-LÓPEZ, A.; OLMOS-MIGUELÁÑEZ, S.; SÁNCHEZ-PRIETO, J. C. Calidad em e-Learning: Identificación de sus dimensiones, propuesta y validación de un modelo para su evaluación en Educación Superior. **RIED**, Madri, v. 24, n. 2, p. 225, fev. 2021.

PASSOS, M. L. S. Avaliação Formativa na Educação a Distância: Concepções da Equipe Multidisciplinar de um Curso de Pós-graduação em Informática na Educação (PIE). **EaD Em Foco**, Rio de Janeiro v. 10, n. 1, p. 1-12, fev. 2020. DOI: https://doi.org/10.18264/eadf.v10i1.810

PEIXOTO FILHO, J.; OLIVEIRA, C. I. C. Qualidade e seus fatores, a partir da visão dos sujeitos da educação a distância na Universidade Federal do Estado do Rio de Janeiro. **Brazilian Journal of Development**, São José dos Pinhais, v. 7, n. 4, p. 43557-43591, abr. 2021. DOI: https://doi.org/10.34117/bjdv7n4-694

PEREIRA, M. G.; GALVÃO, T. F. Etapas de busca e seleção de artigos em revisões sistemáticas da literatura. Epidemiol. Serv. Saúde, Brasília , v. 23, n. 2, p. 369-371, jun. 2014 . Disponível em http://scielo.iec.gov.br/scielo.php?script=sci_arttext&pid=S1679-49742014000200019&lng=pt&nrm=iso - Acesso em: 11 jul. 2024.

PEREZ, E. P. Z; PEREZ, J. G. Considerações sobre o Papel de Um Tutor na Educação a Distância.**Diálogos Acadêmicos IESCAMP – ReDAI**, Campinas, v. 1, n. 1, p. 17-24, ago./dez. 2018.

PIMENTA, I. D. S. F. **Treinamento de habilidades não-técnicas em unidades de terapia intensiva: uma revisão sistemática**. 2022. 105 f. Dissertação (Mestrado em Saúde Coletiva) - Universidade Federal do Rio Grande do Norte, Natal, 2022.

REIO, T. G.et al. A Critique of Kirkpatrick's Evaluation Model. **New Horizons in Adult Education and Human Resource Development**, [S.l.], v. 29, n. 2, p. 35-53, apr. 2017. DOI: https://doi.org/10.1002/nha3.20178

RIBEIRO, M. A. S.; LOPES, M. H. B. M. Desenvolvimento, aplicação e avaliação de um curso à distância sobre tratamento de feridas. **Rev Lat Am Enferm**., Ribeirão Preto, v. 14, n. 1, p. 77-84, fev. 2006.

RIZZATTI JUNIOR, G. Referências para avaliação da qualidade de cursos de educação superior a distância nas universidades públicas brasileiras. *In*: COLÓQUIO INTERNACIONAL SOBRE GESTÃO UNIVERSITÁRIA NA AMÉRICA DO SUL, 9., 25 a 27 nov. 2009, Florianópolis. **Anais...** Florianópolis: UFSC, 2009. p. 25-27. Disponível em: https://repositorio.ufsc.br/bitstream/handle/123456789/35880/Referenciais%20para%20avalia%C3%A7%C3%A3o%20da%20qualidade%20de%20cursos%20de%20educa%C3%A7%C3%A3o%20superior%20%C3%A0%20dist%C3%A2ncia%20nas%20unoversod.pdf?sequence=1 - Acesso em: 11 jul. 2024.

RODRIGUES, C. M. C.et al. Uma proposta de instrumento para avaliação da educação a distância. **Ensaio:** Aval Pol Públ Edu., Rio de Janeiro, v. 22, n. 83, p. 321-354, jun. 2014.

RODRIGUES, R. C. V.; PERES, H. H. C.Desenvolvimento de Ambiente Virtual de Aprendizagem em Enfermagem sobre ressuscitação cardiorrespiratória em neonatologia.**Rev. Esc. Enferm. USP,** São Paulo, v. 47, n. 1, p. 235-241, fev. 2013.

ROMISZOWSKI, A. J. Aspectos da pesquisa em EAD. *In*: LITTO, F. M.; FORMIGA, M. M. M. **Educação a distância**: O Estado da arte. São Paulo: Pearson Education do Brasil, 2009. p. 422-434

ROSSIT, R. A. S.Processos avaliativos na formação e no trabalho interprofissional em saúde. *In*: BATISTA, N. A. **Educação Interprofissional no Brasil**: formação e pesquisa. Porto Alegre: Rede Unida, 2022. (v. 26, Série Vivência em Educação na Saúde).

RUBIO, M. J. Enfoques y modelos de evaluación del e-learning. **RELIEVE**, Valencia, v. 9, n. 2, p. 101-120, out. 2003.

RUHE, V; ZUMBO, B. D. **Avaliação de educação a distância e e-learning**. Porto Alegre: Penso, 2013.

RUSCIOLELLI, V. B.*et al*. Construção e análise de um procedimento avaliativo de treinamento: modelo kirkpatrick. **Rev. FSA**, Teresina, v. 17, n. 1, p. 177-194, jan. 2020. Disponível em: http://www4.unifsa.com.br/revista/index.php/fsa/article/view/1896/0 - Acesso em: 11 jul. 2024

SANTOS, F. P. **A tutoria na EaD**: a importância do tutor no processo de ensino e aprendizagem do aluno. Rio de Janeiro: Autografia, 2022.

SANTOS, G. N. *et al*. Effectiveness of E-Learning in Oral Radiology Education: A Systematic Review. **J Dent Educ.**, Washington, v. 80, n. 9, p. 1126-1139, set. 2016.

SCHWAB-REESE, L. M. "Oh, this is actually okay": Understanding how one state child welfare training system adapted to the COVID-19 pandemic. **Child Abuse Negl**., [S.l.], v. 110, n. 2, p. 104697, dez. 2020. DOI: https://doi.org/10.1016/j.chiabu.2020.104697

SELBY, P. *et al*. Review and evaluation of online tobacco dependence treatment training programs for health care practitioners. J **Med Internet Res**., Toronto, v. 17, n. 4, p. e97, abr. 2015. DOI: https://doi.org/10.2196/jmir.3284

SILVEIRA, J. S. **Instrumento de avaliação de ações permanente no processo de trabalho em um hospital público-universitário**. 2023. 147 f. Dissertação (Mestrado em Ensino na Saúde) - Universidade Federal de Ciências da Saúde de Porto Alegre, Porto Alegre, 2023.

SOARES, S.; MASSUGA, F.; GONZAGA, C. A. M. A Avaliação da Aprendizagem na Modalidade de Educação a Distância: Caracterização sob a Égide de uma Revisão Sistemática. **EaD Em Foco**, Rio de Janeiro, v. 12, n. 1, e1631, mar. 2022. DOI:https://doi.org/10.18264/eadf.v12i1.1631

SOUZA, A. C; ALEXANDRE, N. M. C; GUIRARDELLO, E. B. Propriedades psicométricas na avaliação de instrumentos: avaliação da confiabilidade e da validade. **Epidemiol. Serv. Saude**, São Paulo, v. 26, n. 3, p. 649-659, jul./set. 2017.

TANI, Z. R. **As Novas Competências e Habilidades para o(a) profissional tutor(a) que atua no ensino a distância:** projeto integrado com a liderança. São Paulo: Dialética, 2023.

TRINDADE, C. S.et al. Estudo da Unidimensionalidade da Escala para Avaliação da Qualidade dos Objetos de Aprendizagem da Área da Saúde (Equalis-OAS). **EaD Em Foco**, Rio de Janeiro, v. 12, n. 1, e1641, jun.2022. DOI: https://doi.org/10.18264/eadf.v12i1.1641

VAN SLYKE, C.; KITTNER, M.; BELANGER, F. **Identifying Candidates for Distance education**: A telecommuting perspective. Baltimore: Proceedings of the America's Conference on Information Systems, 1998.

WUTOH, R.; BOREN, S. A.; BALAS, E. A. eLearning: a review of Internet-based continuing medical education. **J Contin Educ Health Prof**., Nova York, v. 24, n. 1, p. 20-30, Winter 2004. DOI: https://doi.org/10.1002/chp.1340240105

ZERBINI, T.; ABBAD, G. S.; BORGES-FERREIRA, M. F. Medidas de reação a cursos a distância. *In*: ABBAD, G. S.; MOURÃO , L.; MENESES, P. P.; ZERBINI, T.; BORGES-ANDRADE, J. E.; VILAS-BOAS, R. (Orgs.). **Medidas de avaliação em treinamento, desenvolvimento e educação**: ferramentas para gestão de pessoas. Porto Alegre: Artmed, 2012. P. 141-149.