



UNIVERSIDADE CATÓLICA PORTUGUESA

EFICÁCIA E IMPACTO DO ENSINO:
PERSPECTIVAS DE PROFESSORES E ALUNOS

Tese apresentada à Universidade Católica Portuguesa
para obtenção do grau de Doutor em Ciências da Educação

por

Bruno Miguel Santos César

FACULDADE DE EDUCAÇÃO E PSICOLOGIA
fevereiro 2025



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Sob orientação de Professora Doutora Diana Soares

FACULDADE DE EDUCAÇÃO E PSICOLOGIA

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à Lexi e à Edi

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Resumo

A eficácia docente é amplamente reconhecida como um fator essencial para o sucesso educativo, com impacto direto no desempenho académico dos alunos e na qualidade do ensino-aprendizagem. A capacidade dos professores para motivar, guiar e implementar estratégias pedagógicas eficazes desempenha um papel crucial no processo de aprendizagem e no desenvolvimento das competências dos estudantes. Deste modo, compreender os diferentes elementos que constituem a eficácia docente é fundamental para melhorar as práticas educativas e maximizar os efeitos positivos do ensino. Partindo deste enquadramento, esta investigação visa explorar: "Quais as principais características da eficácia docente e como é percebida por professores e alunos?", e mais especificamente as seguintes subquestões: "Quais as principais características dos professores eficazes?", "Quais as principais dimensões associadas à autoeficácia docente, na perspetiva de professores portugueses e internacionalmente?", "Quais as perceções dos alunos sobre a eficácia docente?", "Quais são as divergências e convergências entre as perceções dos professores e dos alunos sobre a eficácia docente?" e "De que forma o desempenho académico dos alunos influencia a sua perceção sobre a eficácia docente?"

Os resultados destacam que a multidimensionalidade do conceito de eficácia docente, integrando: o envolvimento dos alunos, a gestão de sala de aula e as práticas instrucionais. Este conceito é, ainda, percecionado de forma distinta por professores e alunos.

Enquanto os professores avaliam a sua eficácia com base na aplicação de estratégias pedagógicas, os alunos valorizam mais a clareza das explicações, o apoio individualizado e a relação interpessoal. O desempenho académico dos alunos parece, ainda, influenciar a forma como percecionam os seus professores. Alunos com melhores resultados tendem a avaliar os docentes de forma mais positiva, enquanto aqueles com dificuldades académicas apresentam perceções mais críticas. Estes resultados reforçam a necessidade de estratégias pedagógicas diferenciadas e inclusivas, que respondam às necessidades individuais dos alunos e promovam um ensino equitativo.

Os resultados reforçam a relevância da formação contínua dos professores para atualização constante das suas práticas pedagógicas, a implementação de metodologias inovadoras centradas no aluno e o fortalecimento da relação professor-aluno.

Palavras-chave: Eficácia docente, Autoeficácia do professor, Percepção dos alunos, Qualidade do ensino, Práticas instrucionais; desempenho escolar

Abstract

Teaching effectiveness is widely recognized as an essential factor for educational success, with a direct impact on students' academic performance and the quality of the teaching-learning process. Teachers' ability to motivate, guide, and implement effective pedagogical strategies plays a crucial role in the learning process and the development of students' competencies. Thus, understanding the different elements that constitute teaching effectiveness is fundamental to improving educational practices and maximizing the positive effects of teaching.

Based on this framework, this study aims to explore: *"What are the main characteristics of teaching effectiveness, and how is it perceived by teachers and students?"*, more specifically, it addresses the following subquestions: *What are the main characteristics of effective teachers?, What are the key dimensions associated with teacher self-efficacy, from the perspective of Portuguese teachers and in an international context?, What are students' perceptions of teaching effectiveness?, What are the divergences and convergences between teachers' and students' perceptions of teaching effectiveness? and How does students' academic performance influence their perception of teaching effectiveness?*.

The results highlight the multidimensional nature of teaching effectiveness, integrating three key aspects: student engagement, classroom management, and instructional practices. This concept is also perceived differently by teachers and students.

While teachers assess their effectiveness based on the application of pedagogical strategies, students place greater value on the clarity of explanations, individualized support, and interpersonal relationships. Additionally, students' academic performance appears to influence their perception of teachers. High-achieving students tend to evaluate teachers more positively, whereas those facing academic difficulties present more critical perceptions.

These findings reinforce the need for differentiated and inclusive pedagogical strategies that address students' individual needs and promote equitable teaching.

Moreover, the results emphasize the importance of continuous teacher training to ensure the ongoing improvement of pedagogical practices, the implementation of innovative student-centered methodologies, and the strengthening of the teacher-student relationship.

Keywords: Teaching effectiveness, Teacher self-efficacy, Student perceptions, Teaching quality, Instructional practices, Academic performance

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Lista de Abreviaturas

CCT – Contrato Coletivo de Trabalho

CFA – Confirmatory Factor Analysis

CNE – Conselho Nacional de Educação

EF 2020 – Educação e Formação 2020

EFA – Exploratory Factor Analysis

ET 2020 – Quadro Estratégico para a Cooperação Europeia no Domínio da Educação e da Formação

GEM – Global Education Monitoring

IBM SPSS – International Business Machines Statistical Package for the Social Sciences

JOUE – Jornal Oficial da União Europeia

McREL – Mid-Continent Research for Education and Learning

OECD – Organização para a Cooperação e Desenvolvimento Económico

SELTQ – Student Evaluation of Learning and Teaching Questionnaire

TSES – Teachers' Sense of Efficacy Scale

UE – União Europeia

UNESCO – Organização das Nações Unidas para a Educação, a Ciência e a Cultura

Introdução

Uma sociedade ideal caracteriza-se por ser capaz de proporcionar a cada pessoa, independentemente da sua origem cultural, social e económica e das capacidades individuais, a oportunidade de desenvolver plenamente o seu potencial, formando cidadãos empenhados e preparados para enfrentar os desafios de um mundo em constante transformação (UNESCO, 2017). O Relatório *Global Education Monitoring Report, 2024/5, Leadership in Education: Lead for Learning* (UNESCO, 2024) destaca que os líderes educacionais são mais do que gestores, são agentes de mudança que precisam de uma visão clara e de competências únicas para orientar as suas instituições em direção ao sucesso educacional. Este objetivo depende de uma instituição fundamental: a escola, e de um dos seus elementos mais essenciais, os professores (Freire, 1996; Nóvoa, 2009). Os professores assumem o papel de agentes de mudança, e a sua prática pedagógica é um fator crucial na promoção da igualdade de oportunidades educacionais e na transformação social (Darling-Hammond, 2000; Hattie, 2009; OECD, 2023).

Como tal, compreender como a ação do professor impacta a qualidade das aprendizagens dos alunos permanece, ainda, enquanto objeto de estudo a explorar, alimentando um vasto campo de investigação na área das ciências da educação. Pese embora a literatura extensa neste domínio, várias questões permanecem ainda em aberto, nomeadamente os mecanismos e processos que explicam o efeito do professor ao nível das atitudes, valores, comportamentos e bem-estar emocional dos alunos; que práticas pedagógicas específicas são mais efetivas para a aprendizagem dos alunos; qual o efeito da relação pedagógica professor-aluno e como a desenvolver, entre outras. Ensinar ultrapassa a simples transmissão de conhecimentos; implica inspirar, motivar e orientar cada estudante, promovendo aprendizagens significativas e duradouras (Darling-Hammond et al., 2020; Hattie & Zierer, 2017; Shulman, 1987). Permanece em aberto como e porquê tal acontece.

É neste ponto que se centra a presente investigação, visando explorar quais as variáveis e processos que sustentam a “eficácia docente” na aprendizagem dos alunos.

Relevância do Estudo

A relevância deste estudo advém da necessidade de uma abordagem mais holística e multidimensional na avaliação da eficácia do ensino. A investigação tem demonstrado que a eficácia docente não pode ser reduzida a um conjunto de práticas meramente técnicas, devendo igualmente integrar elementos organizacionais que influenciam o bem-estar e o envolvimento dos alunos (Holzberger et al., 2019). Compreender a interligação destas dimensões na prática pedagógica pode oferecer contributos valiosos tanto para o desenvolvimento profissional dos docentes como para a formulação de políticas educativas mais eficazes.

O interesse por esta temática surge da constatação de que, em muitos contextos educativos, a avaliação do impacto dos professores se restringe a indicadores quantitativos, como classificações e taxas de aprovação, ignorando percepções subjetivas e fatores qualitativos. A exploração das perspetivas de professores e alunos possibilita uma análise mais abrangente e aprofundada sobre o que define um ensino eficaz, promovendo um equilíbrio entre os resultados obtidos e os processos de aprendizagem.

Este estudo assume particular importância no panorama educativo ao contribuir para a conceção de práticas pedagógicas mais inclusivas e eficazes. A compreensão do impacto das diferentes dimensões da eficácia docente na aprendizagem pode permitir a gestores e formadores de professores a implementação de programas de capacitação mais abrangentes, contemplando não apenas as competências técnicas, mas também as vertentes organizacional e comportamental. Paralelamente, os resultados desta investigação poderão apoiar o desenvolvimento de instrumentos de avaliação mais completos e alinhados com as reais necessidades das salas de aula, favorecendo uma melhoria contínua do ensino e da aprendizagem.

Para contextualizar o objeto de estudo desta investigação, estrutura-se a presente introdução nos seguintes pontos: i) papel do professor na aprendizagem dos alunos; ii) Eficácia docente, conceito e modelos teóricos; iii)

Problema e questões de investigação e estrutura da tese.

Papel do professor na aprendizagem dos alunos

O papel do professor como agente de mudança tem sido amplamente reconhecido nos documentos estratégicos da União Europeia, que salientam a sua importância na construção de um sistema educativo inclusivo, inovador e adaptado aos desafios contemporâneos (Nóvoa, 2017; JOUE, 2021). Johnson (2017) discute como os professores podem aumentar a motivação dos alunos ao criar ambientes propícios à aprendizagem, apoiar a autonomia e tornar a aprendizagem relevante. Ao proporcionar um ensino de qualidade, o professor transcende a mera transmissão de conteúdos académicos, uma ação pedagógica eficaz fomenta nos alunos competências essenciais, como o pensamento crítico, a criatividade e a resiliência – habilidades fundamentais numa sociedade complexa e dinâmica (Henriksen et al., 2017; Perrenoud, 1998; Viczko, 2016).

A influência do professor no desempenho dos alunos é amplamente reconhecida, sendo um dos fatores mais determinantes para o sucesso académico e o desenvolvimento socioemocional. Diversos estudos (Agyekum, 2019; Kim & Seo, 2018; Reis et al., 2021) destacam que as práticas pedagógicas de qualidade e a relação professor-aluno impactam diretamente na aprendizagem dos alunos. Neste sentido, Hattie (2009) identifica que o feedback dos professores é uma das intervenções mais poderosas para melhorar o desempenho académico, destacando a importância de práticas pedagógicas reflexivas e direcionadas. Blazar & Kraft (2017) reforçam que professores que promovem ambientes de aprendizagem motivadores conseguem fomentar competências como a resiliência e a mentalidade de crescimento. Estes fatores são essenciais para o envolvimento ativo dos alunos e para a melhoria contínua dos resultados. Ainda, Pianta et al. (2012) sublinham que as interações positivas em sala de aula não apenas favorecem a aquisição de conhecimentos, mas também contribuem para o desenvolvimento de competências interpessoais e emocionais dos estudantes.

No contexto do “Quadro Estratégico para a Cooperação Europeia no Domínio da Educação e da Formação – ET 2020” e da “Comunicação da Comissão Europeia: Realizar o Espaço Europeu da Educação até 2025”, (Comissão Europeia, 2017) o professor é apresentado como um catalisador fundamental para a transformação da educação, assumindo funções que vão

além da mera transmissão de conhecimentos, e passando a ter um papel ativo na formação de cidadãos críticos, preparados e responsáveis.

A Comunicação “Realizar o Espaço Europeu da Educação até 2025” sublinha a necessidade de valorizar o professor, promovendo o seu desenvolvimento profissional e a sua adaptação às novas exigências pedagógicas e tecnológicas (European Commission, 2020). Para enfrentar as mudanças rápidas no mercado de trabalho e as exigências de uma cidadania ativa, a Comissão Europeia propõe que os professores desenvolvam competências digitais e inovem nas metodologias de ensino, utilizando ferramentas tecnológicas e abordagens centradas no aluno (European Commission, 2020). Com a introdução de práticas pedagógicas adaptativas e interativas, o professor contribui para a criação de ambientes educativos que potenciam o envolvimento ativo dos alunos, fortalecendo assim a sua capacidade de resolver problemas, colaborar e adaptar-se a novos contextos.

O Educação e Formação 2020 (EF 2020) (Comissão Europeia, 2019), por seu lado, destaca a importância de apoiar os professores na sua missão de promover uma educação de qualidade e inclusiva em toda a União Europeia. Este quadro estratégico reconhece o professor como um pilar essencial para o desenvolvimento de competências-chave nos alunos, incluindo a literacia digital, o pensamento crítico e a criatividade (European Union, 2019). De acordo com o EF 2020, é fundamental que os professores recebam formação contínua que os prepare para responder às necessidades de uma sociedade diversa e globalizada. Investir no professor enquanto agente de mudança implica não só capacitar os docentes com ferramentas e conhecimentos atuais, mas também reconhecer e valorizar a sua contribuição essencial para o crescimento dos alunos e, conseqüentemente, para o progresso social.

Estes documentos refletem, ainda, a necessidade de criar redes de cooperação e partilha de práticas entre professores e instituições educativas em toda a União Europeia. Essa visão de cooperação transnacional facilita o intercâmbio de experiências e promove a inovação pedagógica, estimulando os professores a adotarem abordagens pedagógicas mais inclusivas e eficazes (European Commission, 2020; European Union, 2019). De acordo com Hattie (2009), a colaboração entre docentes e a troca de práticas bem-sucedidas

aumenta significativamente o impacto da educação, ajudando os professores a adaptarem-se melhor às diversas realidades educativas.

Portanto, tanto a Comunicação de 2020 quanto o ET 2020 evidenciam que o professor é um elemento-chave para a construção de um sistema educativo capaz de preparar os alunos para os desafios do século XXI. Ao apoiar e valorizar os professores, a União Europeia não apenas promove a melhoria da qualidade do ensino, mas também cria as condições para uma transformação social mais ampla, onde a educação é um vetor de desenvolvimento e inclusão. A visão da União Europeia coloca os professores na linha de frente como agentes de mudança, capacitando-os para liderar o caminho em direção a uma educação mais adaptada, equitativa e centrada no aluno, essencial para a concretização do Espaço Europeu da Educação até 2025.

Assim, o trabalho dos professores é um pilar essencial para o desenvolvimento dos alunos, e a sua eficácia em sala de aula desempenha um papel determinante na promoção de aprendizagens significativas e na preparação dos alunos para os desafios do futuro. Em Portugal, o "Referencial para a Inovação Pedagógica nas Escolas", do Conselho Nacional de Educação (CNE, 2023), destaca a necessidade de uma prática pedagógica inovadora, que privilegie métodos de ensino dinâmicos e centrados no aluno, enquanto sublinha a importância do papel do professor como mediador, orientador e facilitador de conhecimento.

A capacidade do professor em adaptar estratégias pedagógicas às necessidades dos alunos está diretamente relacionada à criação de ambientes de aprendizagem que estimulem o pensamento crítico, a criatividade e a resolução de problemas. Neste sentido, compreender os métodos, atitudes e abordagens que geram melhores resultados na aprendizagem e no desenvolvimento global dos alunos é essencial. Estudos como os de Hattie (2017), destacam a importância de identificar práticas pedagógicas eficazes e de promover o desenvolvimento profissional contínuo dos professores, fomentando uma cultura de melhoria constante e inovação no ensino. O referencial do CNE enfatiza que a qualidade da interação entre professores e alunos tem um impacto direto na motivação, no interesse e na autonomia dos alunos. Um professor eficaz é aquele que não só transmite conhecimentos, mas que também inspira, apoia e orienta os alunos, ajudando-os a desenvolver competências

socioemocionais e a construir um sentido de responsabilidade e cidadania. Este papel vai além do domínio técnico dos conteúdos disciplinares, exigindo também habilidades interpessoais e uma abordagem empática e inclusiva, capazes de responder à diversidade dos contextos e das experiências dos alunos. A experiência docente também tem impacto no desempenho dos alunos, com professores mais experientes a demonstrar melhores capacidades de gestão e comunicação (Akiri, 2013; Akram, 2019). Assim, o impacto do professor vai além da transmissão de conteúdos, abrangendo o desenvolvimento de capacidades essenciais para o sucesso dos alunos em contextos académicos e pessoais. Através do compromisso e da dedicação dos professores, os alunos não só adquirem conhecimentos, mas tornam-se cidadãos preparados para transformar o mundo ao seu redor. Em cada aula eficaz, em cada aprendizagem significativa, está a construção de um futuro melhor para todos. A qualidade da instrução revela-se um forte preditor dos resultados de aprendizagem, e tanto avaliações nacionais como internacionais focam-se em aspetos como o apoio aos alunos e a gestão da sala de aula (Creemers & Kyriakides, 2008; Klieme, 2013). Shulman (1987) salienta que a eficácia não pode ser avaliada apenas através da observação da sala de aula sem se considerar o conteúdo ensinado, enquanto Robinson (2004) identifica cinco elementos cruciais para a eficácia docente: conhecimento profundo da matéria, interação com os alunos, planeamento, competências pedagógicas e presença pessoal. Modelos de avaliação como os de Marzano (2011) e Danielson (2011) integram aspetos como o planeamento, a dinâmica da sala de aula e o profissionalismo, enquanto fatores ambientais, como os recursos disponíveis e o apoio entre colegas e administradores, também influenciam a eficácia dos professores (Denzler & Wolter, 2009; Tschannen-Moran & Hoy, 2001).

As práticas pedagógicas desempenham um papel vital na eficácia docente, com elementos como a clareza das instruções, a ativação cognitiva e um ambiente de apoio a serem essenciais para promover o envolvimento cognitivo dos alunos e facilitar a conexão entre novos e antigos conhecimentos (Blömeke et al., 2016; Holzberger et al., 2019). A eficácia do professor tem impacto direto nos resultados dos alunos, especialmente em disciplinas como a Matemática (Cogan et al., 2001; Cogan & Schmidt, 2015). Estudos sugerem que

atividades como o trabalho em grupo e a elaboração de relatórios podem melhorar significativamente as notas dos alunos (Wenglinsky, 2004).

O papel do professor como agente de mudança e elemento essencial para o desenvolvimento dos alunos é ainda amplamente sublinhado nos documentos estruturantes da educação em Portugal, como o *Despacho Normativo n.º 10-B/2018* sobre a Autonomia e Flexibilidade Curricular, o *Estatuto da Carreira Docente* (revisto em 2019) e o *Perfil dos Alunos à Saída da Escolaridade Obrigatória* (2017). Estes documentos reconhecem o professor não apenas como transmissor de conhecimento, mas como facilitador de aprendizagens centradas nos alunos, fundamentais para que os estudantes desenvolvam as competências e os valores necessários para enfrentar os desafios da sociedade contemporânea (Creemers & Kyriakides, 2008; Hattie, 2009).

O *Regime de Autonomia e Flexibilidade Curricular* concede aos professores maior liberdade para adaptar o currículo às necessidades dos alunos, promovendo uma educação personalizada e inclusiva. Esta autonomia incentiva os professores a adotar metodologias ativas, como projetos interdisciplinares, e a focar-se no desenvolvimento de competências transversais – como pensamento crítico e colaboração – que são fundamentais para formar cidadãos capacitados e responsáveis (Biggs & Tang, 2011; Klieme, 2013). Neste contexto, o professor torna-se mediador de experiências e promotor de aprendizagens significativas que contribuem para a preparação dos alunos para um mundo em constante transformação.

Por sua vez, o *Perfil dos Alunos à Saída da Escolaridade Obrigatória* completa esta visão ao estabelecer uma educação centrada não apenas na transmissão de conteúdos, mas também no desenvolvimento de competências éticas, emocionais e sociais. Este documento destaca a importância dos professores em promoverem uma educação que visa o desenvolvimento integral dos alunos, incentivando a autonomia, a responsabilidade e o sentido crítico, qualidades essenciais para a participação ativa na sociedade (Shulman, 1987; Robinson, 2004). Neste perfil, o professor é visto como um catalisador que facilita o crescimento global dos alunos, preparando-os para serem cidadãos informados e comprometidos com a comunidade.

Além disso, o documento do CNE defende que a formação contínua dos professores deve ser uma prioridade, destacando que o investimento no

aperfeiçoamento pedagógico é um dos principais caminhos para a inovação educacional. Neste sentido, o estudo da eficácia docente contribui para a construção de políticas de formação inicial e contínua que sejam baseadas em evidências e orientadas para o desenvolvimento de competências fundamentais para a prática pedagógica atual. O objetivo é preparar os professores para enfrentarem os desafios de uma educação que se quer cada vez mais personalizada, digital e colaborativa. Parece ficar patente a importância de investir na formação contínua e na valorização profissional dos professores para assegurar uma educação de qualidade.

Por sua vez o *Estatuto da Carreira Docente* reforça a valorização e a formação contínua dos professores, fundamentais para que possam responder às novas exigências pedagógicas, tecnológicas e sociais. A atualização constante das competências dos docentes, promovida por este estatuto, é uma garantia de que o professor permanece um agente de transformação eficaz, capaz de inovar e refletir sobre as suas práticas para promover o desenvolvimento pessoal, social e académico dos alunos (Dellinger et al., 2008). Este enfoque na formação e capacitação dos docentes reflete um compromisso com a melhoria da qualidade educativa e com a criação de ambientes de ensino onde a adaptação e a reflexão são centrais para o sucesso escolar dos alunos.

Em conjunto, estes documentos estruturantes colocam o professor como um pilar fundamental na estratégia educativa, valorizando a sua capacidade de atuar de forma adaptativa e reflexiva no processo de ensino-aprendizagem. A autonomia curricular, a formação contínua e o foco no desenvolvimento integral dos alunos consolidam o papel do professor como agente de mudança, capaz de influenciar positivamente o percurso educativo dos estudantes e promover uma educação que responda eficazmente aos desafios do século XXI (Burroughs et al., 2019; Holzberger et al., 2019). Esta abordagem integrada reforça a importância de apoiar os professores, permitindo-lhes inovar e adaptar as suas práticas pedagógicas para que cada aluno alcance o seu máximo potencial.

Em síntese podemos dizer que o professor é destacado como agente de mudança e peça fundamental no desenvolvimento dos alunos, conforme documentos educacionais em Portugal. Estes documentos reconhecem o professor como facilitador da aprendizagem centrada no aluno e promotor de

competências transversais, como o pensamento crítico e a colaboração. A formação contínua dos docentes é essencial para a inovação pedagógica e para responder às novas exigências sociais e tecnológicas. A valorização e capacitação dos professores é vista como chave para o sucesso educativo e o desenvolvimento integral dos alunos.

Eficácia docente, conceito e modelos teóricos

Neste contexto, a investigação sobre a eficácia dos professores e a aplicação de práticas inovadoras contribui para a criação de um ambiente escolar que respeita as diferenças, promove o sucesso de todos os alunos e prepara cidadãos críticos e ativos. O trabalho docente, enraizado num paradigma de inovação e eficácia, é, portanto, um elemento central na transformação das escolas e no desenvolvimento pleno dos alunos, alinhando-se aos objetivos de uma educação de qualidade e inclusiva, tal como recomendado pelos documentos estruturantes nacionais quer internacionais.

Este debate ganha relevância à medida que se reconhece a influência direta do professor no desempenho académico e no desenvolvimento global dos estudantes. O conceito de eficácia docente tem sido amplamente debatido na literatura académica, dado que a qualidade do ensino é um dos principais fatores que influenciam a aprendizagem e o sucesso dos alunos (Coenen et al., 2018; Hattie, 2009). A eficácia docente é vista como uma variável determinante para os resultados educativos, uma vez que afeta diretamente não só o domínio de conteúdos por parte dos alunos, mas também o seu desenvolvimento pessoal, motivação e capacidade de pensamento crítico. No entanto, a definição de eficácia docente permanece um tema controverso, motivando décadas de investigação para identificar e compreender as características e os fatores que sustentam um desempenho eficaz dos professores (Burroughs et al., 2019; Darling-Hammond, 2000; Muijs et al., 2014; Sims & Fletcher-Wood, 2021). Nos últimos anos, observa-se uma crescente ênfase em práticas que vão além do foco exclusivo nas notas, promovendo competências essenciais para o século XXI, como o pensamento crítico, a criatividade, a resolução de problemas e a autonomia (Park et al., 2021; Thornhill-Miller et al., 2023). Este enfoque evidencia a importância de estratégias de ensino que visem o domínio aprofundado do

conhecimento, em vez de um ensino meramente transmissivo (Pianta & Hamre, 2012; Seidel & Shavelson, 2007). Além disso, práticas de ensino eficazes, que encorajam a colaboração entre alunos e o desenvolvimento de competências socioemocionais, têm sido cada vez mais valorizadas, reconhecendo que uma educação integral promove o crescimento dos alunos não só como aprendizes, mas também como futuros cidadãos responsáveis e participativos.

Assim, a eficácia docente é compreendida atualmente como um conjunto de práticas e competências que englobam mais do que a transmissão de conteúdos. O papel do professor é antes visto como o de um facilitador da aprendizagem, que cria condições para que cada aluno atinja o seu potencial máximo e desenvolva as competências necessárias para enfrentar os desafios futuros. Esta perspectiva reflete a importância de uma visão integradora na definição de eficácia docente, onde a qualidade da instrução, a gestão do ambiente de aprendizagem e a relação empática com os alunos se complementam e constituem os pilares para um ensino eficaz e transformador.

A autoeficácia dos professores, definida como as suas crenças sobre a capacidade de ensinar e influenciar positivamente os alunos, também desempenha um papel fundamental na eficácia docente (Bandura, 1997; Dellinger et al., 2008). Professores com alta autoeficácia tendem a ser mais dedicados, resilientes e capazes de responder melhor às necessidades dos alunos (Tschannen-Moran & Hoy, 2001). Os modelos teóricos sugerem que a eficácia docente é um conceito multidimensional, que integra dimensões instrucionais, organizacionais e emocionais, as quais se refletem de forma significativa nos resultados dos alunos (Holzberger et al., 2019). Os aspetos instrucionais referem-se às práticas pedagógicas, incluindo a clareza e a organização das explicações, a adaptação das estratégias de ensino às necessidades dos alunos, e o uso eficaz de metodologias que promovem a aprendizagem ativa e a construção de conhecimento. Estes elementos são considerados fundamentais, pois promovem a compreensão e a retenção dos conteúdos, facilitando a ligação entre o conhecimento previamente adquirido e o novo. Os aspetos organizacionais referem-se à capacidade do professor em estruturar e gerir o ambiente de aprendizagem de forma eficiente. Isso inclui o estabelecer de rotinas claras, a gestão do tempo e dos recursos disponíveis, a manutenção da disciplina e a criação de um ambiente propício à concentração e

ao envolvimento ativo dos alunos. Professores eficazes planeiam e implementam estratégias que garantem a continuidade das atividades e minimizam interrupções, promovendo um fluxo de aprendizagem consistente e estruturado. Essa organização favorece a atenção e o foco dos alunos, permitindo que se sintam seguros e orientados no processo de aprendizagem. A dimensão emocional está relacionada à qualidade das interações interpessoais entre professor e alunos, bem como ao clima socioemocional estabelecido na sala de aula. Envolve a capacidade do professor em demonstrar empatia, apoio e sensibilidade às necessidades emocionais dos alunos, criando um ambiente acolhedor e motivador. Professores emocionalmente eficazes promovem um sentimento de pertença e segurança emocional, o que contribui para a autorregulação, a motivação e o bem-estar dos alunos. Além disso, a regulação emocional do próprio professor, como a gestão do stress e a manutenção de uma atitude positiva, é essencial para modelar comportamentos e promover relações saudáveis no contexto escolar.

Essas três dimensões – instrucional, organizacional e emocional – são complementares e interdependentes, formando uma base integrada para a eficácia docente, conforme apontado pelos diversos modelos teóricos apresentados na Tabela 1.

Table 1 Análise comparativa dos modelos compreensivos da eficácia docente.

Modelos	Teacher Sense of Efficacy Scale (TSES) (Tschannen-Moran and Woolfolk Hoy, 2001)	Mid-Continent Research for Education and Learning (Morel) Teacher Evaluation Standards (McREL, 2002)	Dynamic Model of Educational Effectiveness (Creemers, B. P. M., & Kyriakides, L. 2008)	The Danielson Teacher Effectiveness Evaluation Model (Danielson, 2011)	Student Evaluation of Learning and Teaching Questionnaire (SELTQ) (Zerihun et al., 2012)	Charlotte Danielson Framework for Teachers (Danielson, 2013)	Marzano's Teacher Evaluation Model (Marzano, 2013)	The Marshall Rubrics (Marshall, 2013)	Most Important based on Muijs (Muijs & Reynolds, 2017)	Stronge Teacher and Leader Effectiveness Performance System (Stronge, 2018)
Variáveis	gestão da sala de aula	facilitação da aprendizagem	Planeamento e preparação das aulas. Gestão da sala de aula. Clima de aprendizagem	planeamento e preparação ambiente de sala de aula	organização e apresentação do conteúdo	Planeamento e Preparação Ambiente de Sala de Aula	Planeamento e Preparação Estratégias de Sala de Aula	Planeamento e Preparação para a Aprendizagem Gestão da Sala de Aula	Clima da sala de aula	planeamento instrucional ambiente de aprendizagem
	Estratégias de instrução	domínio do conteúdo e práticas de ensino	Qualidade das instruções Liderança escolar e visão pedagógica. Cultura escolar e colaboração entre professores. Formação e desenvolvimento profissional contínuo. Monitorização do progresso dos alunos e adaptação das práticas.	instrução responsabilidades profissionais		Instrução Responsabilidades Profissionais	Participação na Escola e na Comunidade	estratégia instrucional Responsabilidades Profissionais	Instrução e interação Oportunidade de aprender e tempo em tarefa	estratégia instrucional profissionalismo e comunicação avaliação da aprendizagem
	Envolvimento dos alunos	reflexão sobre as práticas	Engvolvimento e motivação para aprender.		qualidade do feedback nível de envolvimento dos estudantes autoavaliação dos estudantes		Reflexão e Melhoria Profissional	Expectativas dos professores	aprendizagem autorregulada	monitorização do progresso dos alunos conhecimento profissional
		ambiente respeitoso para uma população diversa de alunos	Políticas educacionais. Currículo nacional e programas de avaliação					Ligação com Famílias e Comunidade		

A análise comparativa dos diferentes modelos de avaliação da eficácia docente evidencia a convergência em várias dimensões, enquanto reflete a diversidade de abordagens para garantir a qualidade educativa. Modelos como o Danielson Framework (2013) e o Marzano Teacher Evaluation Model (Marzano, 2013) enfatizam a importância do planejamento e preparação, considerando o domínio do conteúdo e o estabelecimento de objetivos claros, bem como a gestão eficaz da sala de aula, promovendo um ambiente propício à aprendizagem. Esta competência inclui a capacidade de manter a disciplina, organizar o espaço e os tempos de aula e gerir eventuais conflitos ou distrações. Um ambiente de sala de aula bem estruturado contribui para que os alunos se sintam seguros e focados, facilitando a sua capacidade de aprendizagem. Estes pontos ecoam no *McREL Teacher Evaluation Standards* (2002), que também valoriza o papel do professor como líder e facilitador de estratégias que estimulam o pensamento crítico e a inclusão.

O *Marshall Rubrics* (2013), embora semelhante no enfoque sobre o planejamento, gestão da sala e a ligação com a comunidade, diferencia-se por priorizar a monitorização e o acompanhamento contínuo do progresso dos alunos. Já o *Teacher Sense of Efficacy Scale* (TSES, 2001) destaca-se pela ênfase na percepção do professor sobre a sua capacidade de promover o envolvimento dos alunos e gerir a sala de aula, abordando aspetos mais subjetivos relacionados à eficácia percebida. A eficácia emocional do docente é tida como crucial, na medida em que o estabelecimento de uma relação de confiança e empatia entre professores e alunos pode motivar os estudantes, aumentando o seu interesse e envolvimento nas atividades propostas.

A especificidade do modelo SELTQ (2012), ao incluir dimensões como a autoavaliação dos estudantes e o feedback, introduz uma perspetiva centrada na experiência do aluno, conectando-se ao compromisso de criar ambientes inclusivos e diversificados, como preconizado pelo McREL. Este foco na interação entre professores e alunos também encontra eco nas dimensões de instrução e interação descritas por Muijs e Reynolds (2017).

Em suma, apesar das especificidades contextuais e metodológicas, todos os modelos analisados convergem na centralidade do professor como elemento-chave para o sucesso escolar, destacando a combinação de práticas

pedagógicas eficazes, ambiente positivo e reflexão contínua como pilares fundamentais para a melhoria da educação.

Considerando o contexto nacional, procurou-se trazer para este ponto as dimensões associadas à eficácia do professor, privilegiadas nos normativos referentes à avaliação de desempenho docente.

Assim, tanto o Decreto Regulamentar n.º 26/2012 como o Contrato Coletivo de Trabalho (CCT) de 2024 reforçam os princípios de equidade, desenvolvimento profissional e alinhamento com os objetivos educativos. Ambos incorporam dimensões semelhantes aos modelos internacionais, como a valorização do planeamento, gestão pedagógica, e trabalho colaborativo, destacando também o envolvimento com a comunidade educativa. O CCT adiciona ainda critérios como o desempenho em liderança e gestão, alinhando-se a modelos como o *Stronge Teacher and Leader Effectiveness Performance System* (2018), que avalia competências organizacionais e estratégicas. O modelo português no ensino público, regulado pelo Decreto Regulamentar n.º 26/2012, prioriza a valorização da profissionalidade docente, com destaque para três dimensões principais: competências científicas e pedagógicas, participação na escola e comunidade, e formação contínua. Estas dimensões contrastam com o enfoque internacional, especialmente por avaliarem diretamente a integração do professor em projetos educativos e a interação com famílias e a comunidade, algo menos presente em modelos como o SELTQ. Outra diferença significativa reside na avaliação da liderança e colaboração. Modelos como o *McREL* (2002) e o *Stronge System* (2018) avaliam o impacto dos docentes em termos de liderança e promoção de um ambiente escolar positivo, enquanto o modelo português enfatiza a transparência, a equidade e o alinhamento com os objetivos institucionais. Além disso, os critérios do CCT do ensino privado (2024) incluem fatores como domínio de conteúdos, promoção da aprendizagem e alinhamento com o projeto educativo, aproximando-se, em alguns aspetos, de abordagens como o Marshall Rubrics.

Apesar das diferenças, tanto os modelos internacionais quanto os portugueses partilham a valorização do desenvolvimento profissional contínuo e o foco na melhoria da prática pedagógica. Contudo, enquanto os modelos internacionais privilegiam a análise de estratégias de sala de aula e impacto direto nos resultados dos alunos, o modelo português apresenta uma abordagem

mais institucional, avaliando também a colaboração, a formação contínua e a integração comunitária, promovendo uma visão holística do desempenho docente.

Para alcançar uma melhoria contínua no ensino, a avaliação da eficácia docente é essencial. A utilização de modelos preditivos e estudos internacionais, como o TIMSS (*Trends in International Mathematics and Science Study*), tem sido uma prática comum para analisar o impacto dos professores nos resultados dos alunos. Estes estudos fornecem dados sobre como as diferentes abordagens pedagógicas e práticas docentes influenciam o desempenho académico, fornecendo uma melhor compreensão que ajuda a identificar áreas de melhoria (Subedi & Howard, 2019; Burroughs et al., 2019).

Diversos métodos de avaliação da eficácia docente são atualmente utilizados, como observações em sala de aula, avaliações realizadas pelos alunos e autoavaliações. Estes instrumentos visam fornecer feedback direto e detalhado, tanto sobre a prática pedagógica quanto sobre o ambiente de sala de aula, para que o professor possa aperfeiçoar as suas metodologias de ensino (Andrews, 2004). As observações em sala de aula permitem identificar a aplicação e a adequação das estratégias pedagógicas, enquanto as avaliações pelos alunos, através de questionários e entrevistas, fornecem perspetivas sobre a perceção dos estudantes em relação à qualidade do ensino e ao seu impacto no seu próprio processo de aprendizagem.

Contudo, medir a autoeficácia docente continua a ser um desafio, dado que existem dificuldades conceptuais e a necessidade de considerar influências culturais nas avaliações (Klassen et al., 2011; Wyatt, 2014). A utilização de instrumentos como a Teachers' Sense of Efficacy Scale (TSES) tem ajudado a padronizar a medição da autoeficácia docente, identificando três domínios principais: envolvimento dos alunos (perceção do professor sobre a sua capacidade de motivar os alunos, incluindo aqueles que mostram menos interesse ou que enfrentam dificuldades de aprendizagem. Professores com elevada autoeficácia neste domínio acreditam que conseguem envolver os alunos, estimular a sua curiosidade e promover um ambiente de aprendizagem ativo e participativo. Segundo Tschannen-Moran e Hoy, esta competência é essencial para que os alunos se sintam integrados e interessados nas atividades escolares, o que é particularmente importante em contextos mais desafiantes. A

gestão da sala de aula que se refere à capacidade do professor de manter uma atmosfera de respeito e organização, onde as normas são respeitadas e os comportamentos disruptivos são minimizados. Professores que sentem uma elevada autoeficácia na gestão da sala de aula acreditam que conseguem lidar eficazmente com comportamentos inadequados, estabelecendo um ambiente propício à aprendizagem. Tschannen-Moran e Hoy também destacam que esta competência em gestão é crucial para manter um ambiente estável e seguro, permitindo que o tempo de ensino seja utilizado da melhor forma e estratégias instrucionais, este domínio abrange a confiança do professor na utilização de diferentes métodos e estratégias pedagógicas para promover uma aprendizagem eficaz, adaptando o ensino às necessidades específicas dos alunos. Professores com elevada autoeficácia em estratégias instrucionais acreditam ser capazes de ensinar conteúdos complexos de forma compreensível e de desenvolver práticas inovadoras que facilitam a compreensão dos alunos. Tschannen-Moran e Hoy argumentam que a flexibilidade e a criatividade na aplicação de estratégias são fundamentais para um ensino eficaz e adaptado aos diversos níveis de habilidade dos alunos (Tschannen-Moran & Hoy, 2001). Estudos realizados em várias culturas validaram este modelo, ainda que, em alguns casos, tenham sido feitos ajustes para melhor adequação aos diferentes contextos educacionais (Ruan et al., 2015).

A perceção dos alunos sobre os seus professores também tem um papel central no seu autoconceito em relação às disciplinas e no seu desempenho académico (Geoff, 2004). Perceções positivas resultam em maior envolvimento e sucesso académico, enquanto perceções negativas podem levar à desmotivação. Para medir estas variáveis, Zerihun et al. (2012) desenvolveram o questionário "Student Evaluation of Learning and Teaching" (SELTQ), que avalia fatores como a organização do curso, a avaliação e o feedback, bem como o nível de envolvimento dos alunos. Além disso, a autoavaliação dos estudantes, como demonstrado por Andrade e Valtcheva (2009), contribui para uma melhoria no desempenho académico, permitindo-lhes identificar lacunas no seu conhecimento.

O envolvimento dos alunos é uma variável crítica para a aprendizagem, influenciando diretamente os seus resultados (Kahu, 2013). Embora os alunos mais envolvidos tendam a aprender mais, estudos como o de Deslauriers et al.,

(2019) mostram que estes alunos podem, paradoxalmente, sentir que estão a aprender menos devido ao esforço cognitivo envolvido. O feedback, por outro lado, é crucial tanto para a melhoria dos alunos quanto para o aperfeiçoamento das práticas docentes (Hattie & Timperley, 2007), e uma organização eficaz do conteúdo, de acordo com Leinhardt & Greeno (1986), é fundamental para otimizar as oportunidades de aprendizagem.

A avaliação da eficácia docente do ponto de vista dos alunos é igualmente fundamental, uma vez que eles são os principais beneficiários do processo educativo. A investigação sugere que os alunos avaliam a eficácia dos seus professores com base na clareza das instruções, no feedback fornecido e no ambiente de aprendizagem (Feldman, 2007; Richardson, 2005). Ferramentas como o *Student Evaluation of Learning and Teaching Questionnaire* (SELTQ) permitem aos alunos expressar as suas perceções, ajudando a identificar áreas de melhoria no ensino (Biggs & Tang, 2011; Zerihun et al., 2012). Este questionário analisa quatro dimensões: Planeamento e Organização do Ensino: esta dimensão analisa a estrutura e a organização do conteúdo apresentado pelo docente. Inclui a clareza dos objetivos da disciplina, a sequenciação lógica dos temas e a eficácia na apresentação dos conteúdos. Docentes que organizam o material de forma clara e coerente facilitam a compreensão e permitem que os alunos acompanhem o curso de forma mais estruturada, promovendo uma aprendizagem mais eficaz. Estratégias de Ensino e Envolvimento: nesta dimensão, o foco está nas metodologias e estratégias pedagógicas usadas pelo docente para captar a atenção e o interesse dos alunos. Avalia a utilização de diferentes técnicas de ensino que fomentem a participação ativa e o envolvimento dos alunos. Docentes que incentivam a interação e recorrem a métodos variados (como discussões, trabalho em grupo ou estudos de caso) tendem a motivar mais os alunos e a manter o seu interesse no conteúdo lecionado. Feedback e Avaliação: esta dimensão mede a qualidade do feedback dado aos alunos e a clareza dos critérios de avaliação. Avalia se o docente fornece feedback construtivo e útil, que permite aos alunos identificar o que podem melhorar. Inclui também a transparência nas orientações e nos critérios de avaliação, ajudando os alunos a entender as expectativas e a perceber como o seu desempenho será avaliado. Um feedback eficaz é essencial para o desenvolvimento académico dos alunos e para que se sintam orientados ao

longo do processo de aprendizagem. Relação e Apoio aos Alunos: esta dimensão centra-se no ambiente de aprendizagem e no apoio proporcionado pelo docente aos alunos. Avalia se o docente cria um ambiente acolhedor e respeitoso, promovendo um espaço seguro onde os alunos se sintam à vontade para colocar questões e participar nas aulas. Docentes que demonstram empatia, respeito e disponibilidade para ajudar contribuem para um ambiente de aprendizagem mais positivo, influenciando diretamente a motivação e o sucesso dos alunos.

Como tal, as perceções dos professores e dos alunos são cruciais para compreender e melhorar a eficácia docente. A convergência dessas perceções pode indicar práticas eficazes de ensino, enquanto discrepâncias podem sugerir áreas que necessitam de intervenção para otimizar o processo de ensino-aprendizagem (Könings et al., 2005; Wisniewski et al., 2020). A eficácia docente continua a ser uma área central da investigação educacional, sendo abordada de diferentes perspetivas ao longo dos anos (Antoniou et al., 2015; Cheng & Tsui, 1999; Doyle, 1977; Muijs, 2006). No entanto, uma definição consensual ainda não foi alcançada, dada a sua natureza multidimensional, que abrange desde as características pessoais dos professores até às práticas pedagógicas e fatores institucionais (Muijs, 2006).

Estudos indicam que existem discrepâncias entre as perceções de alunos e professores acerca do processo de ensino-aprendizagem, muitas vezes oriundas de expectativas diferentes e barreiras de comunicação (Petrus, 2018). Compreender estas diferenças é essencial para ajustar as práticas pedagógicas e melhorar a experiência educacional. A eficácia docente, portanto, continua a ser um conceito complexo, moldado por múltiplos fatores que impactam diretamente o desempenho e o desenvolvimento dos alunos.

Em síntese, e com base na extensa investigação sobre eficácia docente e nas diversas perspetivas teóricas e empíricas apresentadas, podemos definir a eficácia docente como a capacidade de o docente promover um ambiente de aprendizagem que facilite o desenvolvimento cognitivo, emocional e social dos alunos, por meio de práticas pedagógicas que se adaptam às necessidades dos estudantes, com clareza e estruturação do conteúdo, gestão eficaz da sala de aula e estratégias instrucionais variadas. Essa eficácia reflete-se no sucesso académico dos alunos e na sua motivação, resultando de uma combinação de

autoeficácia docente, conhecimento especializado da disciplina, interações de qualidade e um compromisso contínuo com o aperfeiçoamento das práticas educativas. Esta definição assume uma visão multidimensional da eficácia do professor, integrando fatores instrucionais, emocionais e organizacionais, tal como sugerido pela literatura (Burroughs et al., 2019; Holzberger et al., 2019). A eficácia docente é avaliada tanto pelas percepções dos professores, que recorrem à autoeficácia e a autoavaliações (TSES) (Tschannen-Moran & Hoy, 2001), como pelas percepções dos alunos, que são os principais beneficiários das práticas pedagógicas e contribuem com reflexões críticas através de instrumentos como o SELTQ (Richardson, 2005). Além disso, essa eficácia implica a capacidade de responder de forma adaptativa a contextos e alunos diversos, realçando a importância de modelos preditivos e de avaliações interculturais para um entendimento mais abrangente da eficácia em diferentes contextos educativos (Ruan et al., 2015; Subedi & Howard, 2019).

Problema de investigação, questões de investigação e estrutura da tese

Anteriormente, destacámos um conjunto de aspetos inerentes ao problema de investigação que fundamenta este trabalho. Este doutoramento insere-se na linha de investigação sobre a eficácia docente, abordando as principais características dos professores eficazes e a forma como essa eficácia é percebida por professores e alunos. Com base na literatura, os professores eficazes distinguem-se por características como domínio do conteúdo, uso de estratégias instrucionais diversificadas, capacidade de gestão da sala de aula, promoção do envolvimento dos alunos e elevada autoeficácia. A pesquisa analisa o impacto dessas características no desempenho dos alunos, a autoeficácia docente no contexto português e sua relação com padrões internacionais, bem como as percepções discentes acerca da qualidade do ensino. Além disso, investiga as convergências e divergências entre as percepções de professores e alunos sobre a eficácia do ensino e a relação entre o desempenho académico dos alunos e sua percepção sobre a eficácia dos professores. Dessa forma, este estudo visa contribuir para o avanço da teoria,

investigação e prática na área da eficácia docente, promovendo um entendimento mais abrangente sobre os fatores que influenciam a qualidade do ensino e da aprendizagem.

A eficácia do ensino é um tema central no campo da educação, uma vez que está diretamente relacionada com os resultados de aprendizagem e o desenvolvimento integral dos alunos. No entanto, a compreensão do impacto do ensino frequentemente se concentra apenas em indicadores de desempenho académico, negligenciando dimensões qualitativas mais amplas, como o envolvimento emocional, a perceção da qualidade das práticas pedagógicas e a gestão organizacional da sala de aula. Este estudo procura explorar de forma abrangente a eficácia docente a partir das perspetivas de professores e alunos.

Considerando o objeto e problema de investigação, formulamos a seguinte questão de investigação:

"Quais as principais características da eficácia docente e como é percebida por professores e alunos?"

Esta questão de investigação divide-se em cinco subquestões, cada uma associada a estudos, organizados em artigos científicos (ver Tabela 2).

A subquestão 1, "Quais as principais características dos professores eficazes?", é explorada nos artigos *Teacher Effectiveness and Student Achievement: Insights from a Systematic Review* e *Portuguese Version of the Teachers' Sense of Efficacy Scale: Validation Study*.

A subquestão 2, "Quais as principais dimensões associadas à autoeficácia docente na perspetiva de professores portugueses e internacionalmente?", é abordada no artigo *Portuguese Version of the Teachers' Sense of Efficacy Scale: Validation Study*.

Relativamente à subquestão 3, "Quais as perceções dos alunos sobre a eficácia docente?", esta é analisada no artigo *Portuguese Version of the Student Evaluation of Learning and Teaching Questionnaire (SELTQ): A Validation Study*.

A subquestão 4, "Quais são as divergências e convergências entre as perceções dos professores e dos alunos sobre a eficácia docente?", é discutida no artigo *Teaching Effectiveness Through the Lens of Students and Teachers: A Comparative Study*.

Por fim, a subquestão 5, "De que forma o desempenho académico dos alunos influencia a sua perceção sobre a eficácia docente?", é abordada no

artigo Desempenho Escolar e Avaliação da Eficácia Docente: Um Estudo Comparativo das Percepções de Alunos.

Table 2 Estudos realizados e questões de investigação

Questões de investigação	Estudos
Quais as principais características dos professores eficazes?	<ul style="list-style-type: none"> • Teacher Effectiveness and Student Achievement: Insights from a Systematic Review • Portuguese version of the Teachers' Sense of Efficacy Scale: validation Study Psychometric characteristics of the Portuguese version of the Teachers' Sense of Efficacy Scale (TSES)
Quais as principais dimensões associadas à autoeficácia docente, na perspetiva de professores portugueses e internacionalmente?	<ul style="list-style-type: none"> • Portuguese version of the Teachers' Sense of Efficacy Scale: validation Study Psychometric characteristics of the Portuguese version of the Teachers' Sense of Efficacy Scale (TSES)
Quais as percepções dos alunos sobre a eficácia docente?	<ul style="list-style-type: none"> • Portuguese version of the Student Evaluation of Learning and Teaching Questionnaire (SELTQ): validation Study Psychometric characteristics of the Portuguese version of the Student Evaluation of Learning and Teaching Questionnaire (SELTQ)
Quais são as divergências e convergências entre as percepções dos professores e dos alunos sobre a eficácia docente?	<ul style="list-style-type: none"> • Teaching effectiveness through the lens of students and teachers: a comparative study
De que forma o desempenho académico dos alunos influencia a sua percepção sobre a eficácia docente?	<ul style="list-style-type: none"> • Desempenho Escolar e Avaliação da Eficácia Docente: Um Estudo Comparativo das percepções de alunos

Visando responder a estas questões de investigação, optámos por uma metodologia de investigação quantitativa, recorrendo-se a instrumentos de recolha de dados que possibilitaram análises estatísticas e inferenciais.

Esta opção deveu-se à necessidade de obter dados objetivos e mensuráveis sobre percepção da eficácia docente. A metodologia quantitativa possibilita uma análise sistemática e rigorosa, garantindo a fiabilidade e validade dos resultados. Além disso, pode permitir generalizar os resultados para um universo mais amplo de professores e alunos (Field, 2018).

Em termos de amostra, esta consistiu em 122 professores de escolas do ensino secundário do sistema educativo português, dos quais 40,2% lecionavam em escolas públicas e 59,8% em escolas privadas. No total, 87,7% eram mulheres e 12,3% eram homens. Relativamente ao tempo de serviço, 45,9%

tinham entre 11 e 20 anos de experiência docente, 34,4% tinham mais de 20 anos, 10,7% tinham menos de 5 anos e 9% tinham entre 6 e 10 anos.

Relativamente à amostra de estudantes, a amostra incluiu 475 alunos do ensino secundário do sistema educativo português, todos frequentando uma escola privada. Dentro deste grupo, 57,7% eram do sexo feminino e 40,6% do sexo masculino. O processo de amostragem selecionado remete-nos para uma amostra de conveniência, pelo que os resultados obtidos se circunscrevem aos participantes que aceitaram participar (Field, 2018)

No que respeita aos procedimentos de recolha de dados, no caso dos professores, os dados foram recolhidos entre 2020 e 2021 através de um inquérito online, construído no Microsoft Forms. A escola recebeu o link para o inquérito por e-mail, juntamente com um pedido para o fazer chegar aos professores de Português, Biologia e Geologia, Matemática e Física e Química, acompanhado de uma carta explicativa sobre a natureza e os objetivos gerais do estudo, bem como instruções sobre como preencher o inquérito online. Os participantes foram totalmente informados sobre o propósito do estudo e preencheram o questionário de forma anónima. A autoeficácia dos professores foi avaliada através da versão curta do TSES (Tschannen-Moran & Hoy, 2001), questionário já apresentado anteriormente,

A recolha de dados junto dos alunos decorreu entre 2020 e 2021 através de um questionário online no Microsoft Forms. A escola recebeu o link para o inquérito, juntamente com uma carta explicativa sobre a natureza e os objetivos do estudo, bem como instruções para a distribuição do inquérito a todos os alunos. Os participantes foram devidamente informados sobre o propósito do estudo e preencheram o questionário de forma anónima. A perceção da autoeficácia docente foi avaliada através do SELTQ (Zerihun et al., 2012).

Relativamente aos procedimentos de análise de dados, considerando a natureza dos dados obtidos, foram realizadas análises estatísticas descritivas, como a média e o desvio-padrão, bem como análises estatísticas inferenciais, incluindo o teste de normalidade Kolmogorov-Smirnov e Shapiro-Wilk, o teste Kruskal-Wallis e a correção de Bonferroni. Para a execução dessas análises, recorreu-se ao software IBM SPSS, versão 24.

Por fim, em termos de organização desta tese, está estruturada no formato de artigos e organizada em cinco capítulos, quatro redigidos em inglês e um em português.

O capítulo 1 - *Teacher Effectiveness and Student Achievement: Insights from a Systematic Review*, consiste em examinar o papel crucial dos professores e a qualidade do ensino através de uma revisão sistemática de literatura onde se analisa e discute os resultados empíricos de diferentes projetos de investigação de vários países relacionados com a eficácia do professor, destacando as características do professor mais mencionadas. Este estudo dá suporte aos estudos 2, 3, 4 e 5.

O capítulo 2 - *Portuguese version of the Teachers' Sense of Efficacy Scale: validation Study* tem como objetivo adaptar e validar a versão curta da TSES para uma amostra de professores portugueses, explorando se o modelo tridimensional da escala original se confirma no contexto português.

Em relação ao capítulo 3 - *Portuguese version of the Student Evaluation of Learning and Teaching Questionnaire (SELTQ): validation Study*, este estudo tem como objetivo adaptar o questionário Student Evaluation of Learning and Teaching Questionnaire (SELTQ) para o contexto português, visando entender quais fatores que, na perspetiva dos alunos, mais influenciam a qualidade dos professores.

No capítulo 4 - *Teaching effectiveness through the lens of students and teachers: a comparative study*, investiga a relação entre a autoeficácia docente e as perceções dos alunos sobre a qualidade do ensino no contexto da educação secundária em Portugal identificando convergências e divergências na perceção da eficácia do ensino.

No capítulo 5 – *Desempenho Escolar e Avaliação da Eficácia Docente: Um Estudo Comparativo das perceções de alunos*, investiga a relação entre a perceção da eficácia do professor e o desempenho escolar dos alunos, utilizando o questionário SELTQ (Students' Evaluation of Lecturers' Teaching Questionnaire). A pesquisa analisou dimensões como autoavaliação e feedback do professor e organização e apresentação dos conteúdos, comparando grupos de alunos com diferentes níveis de desempenho.

Após a apresentação de cada um destes estudos, em formato de artigo, são apresentadas as principais conclusões deste trabalho, sintetizando os

resultados mais relevantes. Por fim, são discutidas as implicações para a investigação futura, destacando áreas que carecem de estudo adicional e sugerindo novas abordagens que possam potencializar uma compreensão mais alargada o entendimento sobre a eficácia docente e contribuir para o contínuo aperfeiçoamento da prática docente e do ambiente escolar.

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Capítulo 1. Teacher Effectiveness and Student Achievement: Insights from a Systematic Review

Teacher Effectiveness and Student Achievement: Insights from a Systematic Review¹

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Abstract

Teaching is a complex, multidimensional activity and teacher effectiveness is one crucial aspect for students' success. To improve education, it is critical to identify the attributes contributing to teacher effectiveness. Taking this into consideration several empirical studies have tried to identify specific teacher characteristics contributing to teachers' effectiveness that promoted desirable student performance. This systematic review analyses and discusses the empirical findings of different research projects from several countries related to teacher effectiveness and student achievement, highlighting the most mentioned teacher characteristics that influence student achievement. The results, from the twenty-one analyzed studies from Scopus database, suggest that teachers are a key factor in students' achievements. The instructional practices, the teacher's experience, the teacher's subject-matter expertise, and classroom management are the most significant dimensions in the analysed papers.

Keywords: teacher effectiveness, teacher personal characteristics, instructional practices, teacher quality, student achievement.

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1. INTRODUCTION

There is an unquestionable consensus around the importance of teachers (and the way teachers teach) as one of the most valuable school-based resources that has a profound impact on determining students' learning, future academic achievements, and lifetime outcomes (Coenen et al., 2018; Hattie, 2009).

To improve education, identifying the attributes contributing to teacher effectiveness has been and continues to be critical, since some teachers are more effective than others in promoting student achievement (Atteberry et al., 2015). While the relevance of teacher effectiveness in educational outcomes assumes a clear consensus, the same could not be said regarding the definition of teacher effectiveness. For this reason, the empirical examination of teacher characteristics potentially linked to teacher effectiveness has spurred considerable interest over the past decades (Burroughs et al., 2019a; Sims & Fletcher-Wood, 2021; Muijs et al., 2014; Darling-Hammond, 2000; Klassen & Tze, 2014; Stronge et al., 2011). Several theoretical models have been discussed in the literature concerning the multiplicity of factors and dimensions associated with this concept (Danielson, 2011; Marzano, 2013; Tschannen-Moran & Hoy, 2001; Zerihun et al., 2012) and the diversity of characteristics that makes a teacher an effective one (Chetty et al., 2014; Rivkin et al., 2005). Teaching effectiveness has often been described from a variable-centred perspective according to instructional, organizational, and emotional teaching characteristics and their prediction of students' outcomes (Holzberger et al., 2019).

Because teaching quality is one of the main contributing factors to student learning and development (Hattie, 2009) it is important to measure the effectiveness of teachers' instructional practice in school systems by employing a predictive model, and identify the significant predictors that can be explored at the teacher and school levels to measure teacher effectiveness (Subedi & Howard, 2019). International studies such as TIMSS (Trends in International Mathematics and Science Study) that is an international assessment of 4th and 8th-grade students' performance in mathematics and science, can potentially be

used to address important questions about the role of teachers in influencing student outcomes (Burroughs et al., 2019b).

The use of the teacher effectiveness evaluation models is one method used to determine the link between student achievement and the teacher's instructional practices. These models aim to provide a structured approach to evaluating the effectiveness of teaching practices and identifying areas for improvement. Several different models exist, each with its own set of criteria, methods, and tools for assessment. Some common types of teacher effectiveness evaluation models include: Observation-based Models, Student Achievement Models, Self-assessment Models, Peer Review Models and Multi-dimensional Models. Andrews (2004) asserted that effective learning is guided by certain behaviours and teaching strategies displayed in certain situations that boost students' knowledge and make learning easier for them, enhancing student comprehension and leading to positive outcomes. The characteristics of high-quality instruction include learning climate, autonomy support, and maximization of learning time (Pianta & Hamre, 2009; Seidel & Shavelson, 2007).

In terms of teacher evaluation, shifting the focus to the interaction that teachers have with the students instead of concentrating on numbers, is a perspective that emerges pointing out that what goes on in the classroom to enhance student learning is more relevant than the student testing scores. Activities that will encourage students to engage in higher order thinking processes will become more important because of the instruction that is more focused on mastering a specific set of knowledge and skills.

In the following section, we aim to provide a succinct conceptual analysis of quality in education, underlining its complex and multidimensional characteristics.

Since what is being analysed is very complex and multidimensional, the difficulty felt by researchers in outlining a definition and a definitive measure for the concept is clear. Based on the analysis in this paper, the balance between the depth of the concept and its measurability is clearly an issue.

The second part of the present paper examines how teachers' effectiveness measurement is approached by the researchers. This study is based on a systematic review, following the methodological guidelines of Snyder (2019) and Xiao and Watson (2019) that offers a methodical and rigorous

approach to synthesizing evidence, contributing to a more comprehensive and reliable understanding. It attempts to capture a state-of-the-art perspective of the ways teachers' effectiveness is conceptualised and operationalised, resulting in an outline of the most common significant dimensions of teacher effectiveness that are mostly related to students' learning outcomes, such as students' academic performance and achievements, and aims to clarify the finding of the research, making it more accessible to the public.

The multidimensional concept of teacher effectiveness

Teacher effectiveness has been a critical area of inquiry in educational research, with several conceptualizations being proposed throughout the years, by different authors (Barr 1939; Doyle, 1977; Cheng & Tsui, 1999; Muijs, 2006; Kyriakides, 2015). With this vast field of research, a consensual definition of teacher effectiveness is still a challenge.

The multidimensionality of the teacher effectiveness concept makes it a difficult topic to research as it cannot be captured only by a single criterion (Muijs, 2006). In the literature, several variables have been presented as key dimensions of teacher effectiveness. These variables vary across a wide spectrum from teacher personal characteristics to instructional practices and institutional variables. For instance, according to Robinson (2004), effective teaching implies five propositions: meticulous planning and preparation based on strong subject knowledge; an understanding of the different modes of interaction between teacher and students; the logical and systematic construction of a single lesson; core teaching skills such as questioning, exposition, narration and illustration; and the personal power and presence of the teacher. Along the same line, some models for teachers' evaluation are also integrated: planning and preparation, classroom dynamics, instructional factors and teachers' professionalism (Marzano, 2011; Danielson, 2011). Other authors emphasize the environmental factors that lead to effective teaching, such as resources and interpersonal support from peers and school administrators (Denzler & Wolter, 2009; Tschannen-Moran & Hoy, 2002).

Embracing all this diversity of variables, those that are most mentioned in the literature are related to teacher personal dimensions (such as teacher self-

efficacy and teacher experience), and teacher instructional practices (such as teaching practices and classroom management). This variety of constructs could be mapped into a model of three dimensions: instructional, organizational, and emotional-interactional aspects of teaching (Pianta et al., 2012; Pianta & Hamre, 2009).

Teacher personal dimensions

Teacher self-efficacy is considered one of the most relevant variables of teacher effectiveness (Tschannen-Moran & Hoy, 2001). Self-efficacy refers to personal belief in one's capacity to manage emotions, feelings, and inspirations and the ability to perform the actions required to achieve a certain goal (Bandura, 1997). Applied to the teaching context, teacher self-efficacy also considers accountability, critical thinking, creativity, flexibility, patience, adaptability, and teacher behaviour, with teachers believing in the growth of the intellect and talent of their students. Purposeful and focused enthusiasm over students' belief, potential, sincere empathy, and perseverance as well as working until students succeed makes an effective teacher. Only a teacher with high self-efficacy could achieve such a goal of teacher effectiveness (Rezaull Karim et al., 2021). Accordingly, teacher self-efficacy is clearly associated with student academic outcomes (Chambers & Hardy, 2005).

Several personal dimensions are related to teacher effectiveness, like the number of years that a teacher has worked in a classroom (Carrell & West, 2010), teachers' experience and teacher professional knowledge that refer to their subject-matter knowledge, curricular knowledge, and pedagogical knowledge (Collinson, 1999). Many studies show a positive relationship between teacher experience and the quality of teaching (Hanushek, 2005; Kini & Podolsky, 2016), also affecting student achievement (Wayne & Youngs, 2003; Wiswall, 2013; Ladd & Sorensen, 2017; Gerritsen et al., 2017). Specifically, the experience in teaching helps teachers gain more mastery in teaching skills which, consequently, increases their self-efficacy (Wolters & Daugherty, 2007; Subedi & Howard, 2019). As teachers gain experience, their students not only learn more, as measured by standardized tests, but they are also more likely to do better on other measures of success, such as school attendance (Pil & Leana, 2009), several international

studies comparing country means found that teacher degrees (Akiba et al., 2007; Gustafsson & Nilsen, 2016; Montt, 2011) were related to student outcomes, as did Wößmann (2003) student-level study of multiple countries. However, other studies have failed to identify consistent and statistically significant associations between teacher experience and student achievement (Blömeke et al., 2016; Gustafsson & Nilsen, 2016; Luschei & Chudgar, 2011). In the same way, some studies on the impact of teacher advanced degrees, subject specializations, and certification on students' outcomes have been inconclusive, (Aaronson et al., 2007; Blömeke et al., 2016; Harris & Sass, 2011; Luschei & Chudgar, 2011) suggesting weak, inconsistent, or non-significant relationships. In sum, teacher self-efficacy directly takes part in the improvement of teachers' self-enhancement of teaching values or motivations, consequently influencing the way they interact with students (Rezaull Karim et al., 2021).

Instructional practices and teacher effectiveness

Even though the concept of instructional quality in the field of educational effectiveness research is understood differently by different researchers, it's agreed that it is a multidimensional construct (Baumert et al. 2010; Kyriakides & Creemers, 2008). Besides classroom management, three instructional characteristics, namely cognitive activation, clarity of instruction, and a supportive climate, are regarded as essential (Blömeke et al., 2016). Instructional practices, such as cognitively activating elements, seek to foster students' cognitive engagement and their ability to link new knowledge with existing knowledge (Holzberger et al., 2019).

In defining their teaching practices or strategies, teachers should consider those practices to gain insight into how students learn and how they can connect students' learning to the broader content within the curriculum.

Teachers should generate learning experiences that are authentic and student-centred, so that students can begin to see that there is not always one correct answer to a question and not always one correct way to conclude a problem (Bowman, 2013)

Studies have suggested that teachers' sense of preparedness is related to instructional quality (Blömeke et al., 2016), as well as content knowledge and

content preparation (Schmidt et al., 2017), suggesting that instructional quality may have an indirect effect on student learning. Student-reported data indicates that instructional time (understood as classroom time on a particular subject) does seem to be related to mathematics achievement (Cattaneo et al., 2017; Lavy, 2015; Rivkin & Schiman, 2015).

Analysing TIMSS, Cogan et al. (2001) found an association between classroom opportunity to learn, interpreted narrowly as student exposure to instructional content, and student achievement. In a later study using student-level PISA data, Cogan & Schmidt (2015) identified a robust relationship between the construct of Opportunity to Learn and mathematics literacy across 62 different educational systems.

Wenglinsky (2004) found that even when taking student background into account, various instructional practices can make a substantial difference in the student's academic achievements. In a similar way, Frome et al. (2005) reported that teachers' instructional practices influenced the students' test scores, with the study describing such practices as group work on challenging assignments, oral and written reports, and explaining solutions.

In sum, the multidimensionality of teacher effectiveness concept stresses dimensions such as cognitive activation, clarity of instruction, and a supportive classroom climate. Practices that activate cognitive engagement help students link new knowledge with existing knowledge. Teachers should consider these practices to better understand how students learn and connect their learning to the broader curriculum.

From teacher effectiveness to students' learning outcomes

In the context of teaching, effectiveness typically refers to the types of action that produce or facilitate learning (Ferguson & Danielson, 2015; Seidel & Shavelson, 2007; Klassen & Tze, 2014). Stated differently, teaching is effective when it enables student learning.

As presented, the main categories of teacher effectiveness appear as predictive variables of students' learning outcomes. The relationship between these teacher characteristics on student achievement has been largely explored

in the literature (Wayne & Youngs, 2003; Baumert et al., 2010; Metzler & Wößmann, 2012).

It's common to find present in the investigation characteristics which can influence the teacher-student learning experience, communication, accessibility, and knowledge of the teacher about the subject matter. Focusing on class time, student choices, game time for students and personal adjustment appears to be sufficiently effective to influence the students' achievements and interests (Zerihun et al., 2012). High-quality teaching is the dynamic and interactive process of creating, fostering, adapting, and negotiating learning environments in which all students are supported in activities that have a good chance of improving learning (Seidel & Shavelson, 2007). Past studies show that teacher efficacy has a positive effect on student achievement (GPA - Grade Point Average). Lucas & Schmitz (1991) found a significant relationship between student-teacher evaluations and both the cumulative GPA and scores on the English portion of the basic subject exam. In a study related to the effectiveness of secondary school teachers using a researcher-developed instrument, Ferguson and Womack (1993) found GPA to be the best predictor of effectiveness in introductory education courses. Moulding, Stewart and Dunmeyer (2014) found that teacher efficacy scores (that were related to teacher effectiveness) were significantly higher for pre-service teachers in schools with higher student achievement. Significant positive relationships were found between collective teacher efficacy (CTE) scores and student achievement on grade 8 math, writing and English tests. Furthermore, significant relationships were found between subscales of CTE and all three tests of student achievement (Tschannen-Moran & Barr, 2004).

We can conclude that higher GPA as well as student achievement impacted positively on teacher efficacy or teacher effectiveness. Intuitively, these findings imply that there will be increased teacher effects if the students in their classrooms have high academic achievement. Moreover, a percentage of gifted students correlated positively with teacher effectiveness supporting Caldwell (2012) and Matheis et al. (2017). Without additional interpretation, it's perceived that gifted students support instructional effectiveness by producing good academic results. The results showed the positive effects of the percentages of students with high GPA, the percentage of gifted students, teacher experience

and teacher's academic degree level (Subedi & Howard, 2019). Chetty et al. (2014) found that students taught by highly effective teachers, as defined by the student growth percentile (SGPs) and value-added measures (VAMs), were more likely to attend college, earn more, live in higher-income neighbourhoods, save more money for retirement, and were less likely to have children during their teenage years.

The three main categories of teacher effectiveness identified and examined in the research literature are teacher experience, teacher knowledge, and teacher behaviour, although there is more evidence to support the impact of teacher behaviour, such as instructional content and time on task, on student achievement (Burroughs et al., 2019b). Teachers who see themselves as classroom organizers may focus on classroom management, whereas those who see themselves purely as educators might emphasize emotional support (Nie & Lau, 2009). While there is no single successful pattern of teaching, individual qualities and deficits may partly compensate for one another, depending on one's educational goals. Variable-centred confirmatory factor analyses in several studies could show that separating the three dimensions empirically is possible (e.g., Fauth et al., 2014; Kunter et al., 2008). Teachers might have individual strengths and weaknesses in the instructions provided to students (Halpin & Kieffer, 2015), causing aspects of teaching quality to be displayed accordingly.

Only a few studies adopt a person-centred perspective to analyse profiles of classroom quality and cognitive, motivational, and social outcomes (Curby et al., 2009; Salminen et al., 2018). Salminen et al. (2018), for example, found positive relationships between children's cognitive and social skills, and profiles with high emotional support and classroom organization and intermediate instructional support (at kindergarten level).

Vansteenkiste et al. (2012) analysed how 1025 students perceived their teachers' emotional (i.e., autonomy) and organizational support (i.e., structure). Their results indicate that subgroups of teachers combine emotional and organizational support differently. However, these person-centred analyses did not consider individual teachers and, thus, only identified how subgroups of students perceived teaching in general (e.g., "My teachers...").

Vieluf et al. (2012) analysed data from the Teaching and Learning International Survey 2008 (TALIS) study with a sample of secondary school

teachers from 23 countries representing a variety of school subjects. Using teacher self-reports, the authors found that teachers differed primarily in quantitative representations (quantitative profiles) of the three main teaching quality dimensions – instructional (i.e., enhanced activities), organizational (i.e., structuring), and emotional support (i.e., student orientation) – with fewer differences in teaching patterns (qualitative profiles). The results showed that teachers' experience and level of academic degree have significant effects on student demographic, academic, and disciplinary variables.

When we define teaching effectiveness not only by student achievement gains but also by positive emotional development, our findings show that high-quality instruction is not necessarily also highly effective (Holzberger et al., 2019). Based on previous studies, it is not decisively clear whether there are qualitative or quantitative differences in the way variables manifest within individual teachers. Moreover, extant studies have often addressed only a limited number of variables (not necessarily covering all three dimensions of teaching quality previously described), or a limited number of items for each dimension (Holzberger et al., 2019).

Good teachers have strong content knowledge, are great at promoting student understanding, effectively promote student engagement, and can control and manage their classroom environments (Holmes & Schumacker, 2020). According to Goldhaber & Özek (2019), teacher effectiveness has been found to be the most important school resource related with students' achievements. Teacher effectiveness can be measured by value-added attainment measures, classroom observation, teacher surveys and student feedback (Coe et al., 2014)

In summary, the literature supports the association between teacher effectiveness and student learning outcomes, especially when considering factors such as teacher experience, knowledge, and behavior. Key elements include the student's learning experience, teacher communication, accessibility, and subject matter expertise. Teaching is a dynamic and interactive process involving the creation, fostering, adaptation, and negotiation of learning environments.

Research aims

In line with this theoretical framework, the present work is aimed at identifying, in the literature, the dimensions of teacher effectiveness mostly related to students' learning outcomes, in terms of their academic achievement.

2. Method

Systematic review

Despite the recognized importance of teachers' instructional practices in shaping students' learning outcomes, there remains a need to systematically examine the existing literature to understand the specific ways in which teachers' teaching methods impact students. This research seeks to investigate the extent to which various teaching approaches, strategies, and behaviors employed by teachers influence student academic achievement, engagement, and overall learning experiences. By conducting a systematic literature review, this study aims to synthesize the available evidence and identify key factors contributing to the effectiveness of teaching practices, thereby informing educational policies and practices aimed at enhancing teaching quality and student learning outcomes.

A systematic literature review was performed according to the guidelines suggested by Snyder (2019) and Xiau and Watson (2019). After formulating the research problem and defining the review protocol, the literature search was initiated according to the inclusion criteria identified. The quality of the data was assessed, and results were extracted and analysed. The Prisma checklist (Moher et al, 2009) was used as a criterion for assessing the quality of this study.

Accordingly, a set of procedures were followed to conduct this literature review.

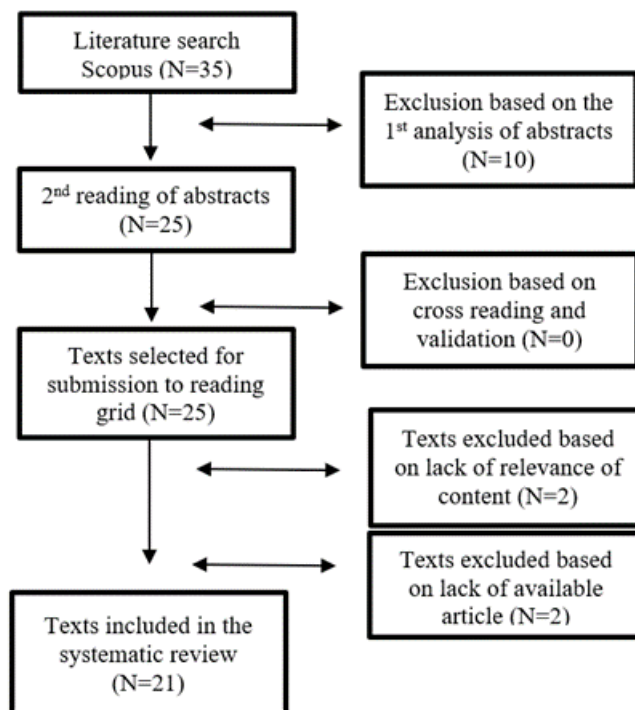
In the first step, electronic databases were searched for literature on teacher effectiveness and student achievement. The database consulted: Elsevier's Scopus as it is the largest abstract and citation database of peer-reviewed publications. At first, relatively generic search terms were chosen, such as 'teacher effectiveness', 'teacher quality', 'student performance', 'student test

score' and 'teacher characteristics student achievement'. In step two, based on the indicators of the more general search and the students' outcomes identified in the introduction section, the more directed search included the following pair of keywords were applied as search terms "teacher effectiveness" and "student achievement", "teacher effectiveness" and "academic achievement". It was only considered articles and conference papers. Applying this search method resulted in a total of 35 studies, which form the basis for this literature review.

Eligibility criteria

The identification, selection, eligibility, and inclusion of literature followed evidence-based minimum items to organise the analysis set (texts) for the systematic review, as shown in Figure 3.

Figure 1 Definition of the analysis set



The literature search was limited to articles, conference papers, book chapters and books published, in open and non-open access, in English, Portuguese and Spanish, within the Social Sciences, until 2021.

This aimed to ensure the collection of the most recent and representative types of scientific production in the topic, including both free and restricted research outputs, in languages and in a subject area that were familiar to the study researchers.

Following these criteria, a total of 35 texts were initially assembled for the set of keyword pairs. The analysis of the abstracts allowed a more accurate selection of the texts and their limitation to a group of 21 texts (Figure 1). The titles and abstracts of the selected texts were then reviewed, which led to the removal of repeated texts as well as texts considered less relevant through cross-validation by the researchers.

Analysis of the literature

The present literature review is a proposal to comprehend how researchers working on teachers' effectiveness conceptualise and operationalise this construct. To capture the broad nature of the literature, the data was addressed through a process of coding and a qualitative content analysis (Cohen et al., 2018). The supportive coding scheme was derived from the theoretical constructs discussed earlier, areas of interest devised in previous review articles, or developed from the articles themselves after the process of reading and rereading. A two-step coding procedure was used, based on two broad categories: description and operationalization. The first step was to code information related to the description elements of the studies. Once the articles were selected, the studies were categorized according to the following dimensions: the year of publication, method (i.e. interview, questionnaire, observation, datasets or review), observation years, measure used in the study, referring to student test scores by considering achievement levels (Level) or achievement gains (Gains), student grades analysed, number of subjects and country of origin (table 4). When no information was present in the analysed study, it was coded as not considered and scored accordingly.

Table 3 Description of Studies Included in Literature Review

Study	Method	Observation years	Measure	Grades	Students	Teachers	Country
Abduliahi & Onasanya, 2010	Q	1991	Level	12th	750	-	NIGERIA
Abrami et al., 1982	Q-O	1977-1979	Level	University	N1= 388; N2=87; N3=108	-	USA
Azigwe et al., 2016	Q-O	2013-2014	Gains	6th	4386	99	GHANA
Bhai & Horoi, 2019	D	2007-2013	Gains	4th-8th	41733	-	USA
Boonen et al., 2014	Q	-	Gains	1st	3476	196	NETHERLANDS
Goldhaber & Startz, 2017	D	1995-2013	Gains	KDG-6th	2 574 899	37417	USA
Gómez-Monarez et al., 2019	R	-	-	-	-	-	-
Guarino et al., 2013	Q	1998-1999	Gains	KDG-1st	21232	-	USA
Heck, 2009	D	2 years	Gains	4th-5th	9196	-	USA
Kim et al., 2018	Q	2014-2015	Level	7th-9th	2082	75	AUSTRALIA
Lee, 2018	D	1987-1994	Gains	7th-12th	5949	1018	USA
Muñoz et al., 2013	D-Q	2009-2011	Level	3rd-4th	6962	281	USA
Rowe et al., 1995	D-Q	1992-1994	Gains	2nd-3rd	1485; 13909	931	USA
Skourdombis, 2017	T	-	-	-	-	-	-
Skourdombis, 2014	T	-	-	-	-	-	-
Skourdombis, 2013	T	-	-	-	-	-	-
Stronge et al., 2015	T	-	-	-	-	-	-
Stronge et al., 2011	Q-O	-	Gains	5th	+4600	379	USA
Stronge et al., 2007	D-Q-O-I	2005-2006	Level	5th	+4600	307	USA
Stronge, Ward, Tucker, Hindman, 2007	O-Q-I	-	Gains	3rd	1936	85	USA
Wayne & Youngs, 2003	R	-	-	-	-	-	-

I – Interview; Q – Questionnaire; O – Observation; D – Datasets; R – Review; T – Theoretical (no new data)

3. Results and Discussion

Through the analysis of the selected articles, we observe three dimensions in the dependent variables: student achievement/outcomes/success, teacher effectiveness, and teacher personality.

Within the dimension of student achievement/outcomes/success, teachers' experience/qualifications emerge as determinants alongside instructional practices implemented by teachers. This results are in line with the finding of Hanushek, (2005) and Kini & Podolsky, (2016).

An emphasized presence is also placed on teacher factors/effects as a variable. Prior achievements also appear as influencers of student success, which is also demonstrated in the study by Atteberry et al., 2015

It also becomes clear the dispersion of variables contributing to student success, with school-related (e.g.: staff stability, private tuition) or students' personal life variables (e.g.: occupational status of father, educational level of mother, free/reduced lunch fee) also reported but with lesser prevalence in the analysed studies. Burroughs et al., 2019b

In the dimension of teacher effectiveness, the differentiation and complexity of instructional practices, classroom management and organization, and teacher planning and organization are referenced. The same results are shown in Pianta & Hamre (2009), Seidel & Shavelson, (2007) or Blömeke et al., (2016).

Regarding the teacher personality dimension, it is reported that both teacher academic and personal support, as well as student performance self-efficacy, have a positive effect. Rezaull Karim et al., (2021) and Vansteenkiste et al. (2012) also points out that there is a relationship between the teacher personality and the students outcomes.

In the second step, operational elements regarding the measurement of the concept and the subsequent analysis were identified and coded according to the following dimensions: main study design, type, subjects, independent variables, dependent variables, and results which will be explained throughout this section (table 5). In this table only the articles with data collection or data analysis were considered.

In the analysis of the selected articles, excluding the 6 theoretical articles, we can see that most investigations are conducted in the USA (11), and mostly these studies are carried out on younger ages up to the 5th grade. In terms of

methods used, 7 articles utilize various types of data sources, 4 articles use questionnaires, and 4 articles use databases. Regarding the samples, most of the studies analyse data from both teachers and students (11), with only 4 articles focusing solely on students; in our sample, no study exclusively examined teachers. It is also evident that the studies favour comparative data on students' progress (10 studies) rather than solely analysing the level of a specific variable of students' academic success.

Table 4 Findings of Studies on Teacher Effectiveness Level

Study	design	Type	Subjects	Independent Variables	Dependent Variables	Significant Relation	Effect	
Abduliahi & Onasanya, 2010	QN	II	Mathematics	Teacher Qualifications; Teacher experience; Teachers Instructional activities; Teachers co-curricular activities; Teacher effectiveness; Mathematics scores; Rural; Semi-Urban; Urban	Achievement in Mathematics	Teacher experience; Teachers Instructional activities; Teachers co-curricular activities; Teacher effectiveness; Mathematics scores	positive	
Abrami et al., 1982	QN	I	achievement test	teacher students' perception	behaviours; ratings; effectiveness	student personality characteristics;	teacher's effectiveness perception; students perceived personality characteristics of their instructors	positive
Azigwe et al., 2016	MM	III	Mathematics	student factors; teaching	background quality of	student achievement	teacher factors; students' prior achievement; educational level of mother; occupational status of father; learning materials; private tuition; provision of learning opportunities after school time;	positive; Classroom effect>student variability
Bhai & Horoi, 2019	QN	III	Math and Reading	student characteristics; classroom characteristics; teacher quality	student outcomes	teacher experience;	positive	
Boonen et al., 2014	QN	0	Math, reading and spelling	students' prior achievements; background; classroom composition; teacher qualifications; teacher attitudes and beliefs; instructional practices	student outcomes;	teacher experience; job satisfaction; math-specific activities; instructional practices; teachers characteristics	positive	
Goldhaber & Startz, 2017	QN	I	Math and Reading	free/reduce price lunch; race/ethnicity; teacher effect	student achievement;	teacher effect;	positive; Effective Teacher not normal distribution	
Guarino et al., 2013	QN	III	Math and Reading; General Knowledge or Sciences	teacher-level variables; instructional practices; pedagogical variables; classroom characteristics; student-family variables	student achievement;	instructional practices;	positive	
Heck, 2009	QN	III	Math and Reading	classroom-level variables; school-level variables	student achievement outcomes;	classroom composition; teacher effectiveness; staff stability	positive	
Kim et al., 2018	QN	III	Math and English	academic achievement; classroom life instrument; performance self-efficacy	teacher personality;	teacher academic support; teacher personal support; student performance self-efficacy Postsecondary aspirations; teacher qualification; teacher level of education; teachers subject-matter expertise; teachers experience; cumulative teachers' quality	positive	
Lee, 2018	QN	0	Math	teacher quality; teacher qualification; students control variables	student educational success	teacher level of education; teachers subject-matter expertise; teachers experience; cumulative teachers' quality	positive	
Muñoz et al., 2013	QN	III	Reading	prior achievement; SES	student scores	prior achievements; free/reduced lunch fee	positive	
				classroom management and organization; planning and instruction; implementing instruction; monitoring student progress; teacher as a person; teacher qualities	teacher effectiveness	classroom management and organization; planning and instruction	positive	

Rowe et al., 1995	QN	II	Reading	teacher factors; student background; affective and behavioural factors	student achievement;	attentiveness	positive
			English and Math	prior achievements; SES; student variables; class/teacher variables; school variables	student achievement;	class/teacher variables	positive
Stronge et al., 2011	QN	III	Math and reading	instructional practices; teacher demographic characteristics; student level variables; classroom variables; teachers' beliefs	student achievement;	Special education status for math; English as second language, ethnicity and gender for reading; prior achievements; classroom management, better organization, positive relationship and student responsibility for more effective teachers	positive
Stronge et al., 2007	QN	III	Math and reading	teacher certification; student level variables; classroom level measures; instructional practices;	student achievement	Special education status for math; English as second language, ethnicity and gender for reading; prior achievements; instructional differentiation; complexity of instruction; assignments differentiation; organization; expectations; personal qualities; respect and fairness; on-task behaviour	positive
Stronge, Ward, Tucker, Hindman, 2007	QN	III		student-teacher interactions; teacher classroom behaviour	teacher effectiveness		positive

QN = Quantitative, QL = Qualitative, MM = Mixed Method; Type 0 Panel data studies which make use of a specific Project data; Type I Panel data studies in which students are randomly assigned to classes; Type II Panel data studies that recognize the potential effects of unobserved heterogeneity; Type III studies include a rich set of control variables and assume that this is enough to account for the potential bias caused by unobserved heterogeneity.

A finding that emerged from the selected literature is that the analysis of teacher effectiveness and student achievement themes grow in popularity over the years. Although it is possible to find references in the 80s and 90s of the past century, a greater interest in the last 10 years is obvious with more than 50% of the publications dated from 2013 onwards.

With respect to the country of research origin, the USA is by far the biggest contributor to the field with 11 studies conducted in that country. Regarding the method, the twenty-one selected documents differ between questionnaire (4 studies), datasets (4 studies), review articles (2 studies), theoretical articles (4 studies) and mixed methods (7 studies). Interviews and observations were present but never used as the only method. The norm in this kind of studies seems to analyse together student progress/performance and teacher's

variables, although some studies (4 studies) only rely on the students' aspects. The preference for a quantitative (14 studies) approach is also clear in these studies. When analysing measurements, the studies can be classified into two categories: level (effect of teacher characteristics on student test scores by considering achievement levels, present in 5 studies) and gain (achievement gains between two measurements distinct in time, present in 10 studies). "To gain an accurate insight on the teaching and learning activities used in grade six in Ghana, specification tables were first developed for both the pre- and post-test measures capturing the salient themes in the curriculum" (Azigwe et al., 2016, p.54).

When analysing the various studies, the field has a wide range of dimensions that are related with the students' achievements. These dimensions range from the teachers' factors (6 studies), teachers' experience (4 studies), instructional practices (5 studies) to classroom dynamics (2 studies), school organizational aspects (4 studies) and students' characteristics (4 studies).

In line with the literature consensus (Coenen et al., 2018; Hattie, 2009) that suggests that teachers are relevant to the students' achievements, the empirical results with recurrent dimensions focus on the teachers' aspects being present in the analysed studies. After the analysis of the various selected papers, Skourdombis (2017) points out that attributing school system success largely to teachers and their work, especially in terms of their classroom teaching practice(s), distorts the school education policy agenda so that evaluations of school productivity purely serve accountability purposes. Also, Skourdombis (2014) warned that the valued-added functionality of teacher effectiveness approaches replaces the wider challenges provided by complex school systems. Facilitating performative endpoints as simple measures of educational productivity reinforces the normalizations of contemporary economic systems.

Positivist classroom teacher effectiveness research discounts and dispenses with contextual influences that do not necessarily correspond to the established "boundaries of the school". Any worthwhile response to student underachievement must first focus on the prevailing social conditions of schooling before enunciating on the instructional performance of classroom teachers (Skourdombis, 2013). As previously presented, and based on the literature, the most used variables to measure teacher effectiveness can be described

as Teacher personal dimensions, Instructional practices and Student variables. In fact, the studies reveal that the dimensions most correlated with students' achievements can be classified within those categories.

Based on the analysis of the selected studies, several dimensions emerge related with teachers' effectiveness showing significant relation with student achievement. Teachers experience/qualifications appeared in 4 studies (Abduliahi & Onasanya, 2010; Bhai & Horoi, 2019; Boonen et al., 2014; Lee, 2018). Teachers Instructional activities/Classroom management and organization (differentiation, complexity, on-task behavior) are present in 6 studies (Abduliahi & Onasanya, 2010; Boonen et al., 2014; Guarino et al., 2013; Muñoz et al., 2013; Stronge et al., 2011; Stronge et al., 2007).

Other dimensions regarded as Teacher factors/teacher effect (such as subject-matter expertise, co-curricular activities, effectiveness perception) are highlighted in 7 studies (Azigwe et al., 2016; Boonen et al., 2014; Rowe et al., 1995; Stronge et al., 2007; Abduliahi & Onasanya, 2010; Goldhaber & Startz, 2017; Heck, 2009; Abrami et al., 1982).

With a smaller frequency, external dimensions to the teachers were found to also be important to teacher effectiveness, such as job satisfaction (Boonen et al., 2014), school staff stability (Heck, 2009), classroom composition (Heck, 2009), and Student Variables were present in 4 studies, as students background/factors (Stronge et al., 2011; Abrami et al., 1982; Lee, 2018; Rowe et al., 1995).

The methods utilized to measure teacher effectiveness in the analysed studies are in line with the literature (value-added attainment measures, classroom observation, teacher surveys and student feedback (Coe et al., 2014)). Also, these findings corroborate the multidimensional concept of teacher effectiveness that is highlighted by Muijs (2006). The literature presents several indicators for teacher effectiveness, such as strong content knowledge, promoting student understanding and student engagement, control and manage classroom environments (Holmes & Schumacker, 2020), and all of these dimensions are observed in the analysed studies as having the potential to influence the students' outcomes. The study by Guarino et al. (2013) clearly illustrates that methodological choices can influence results, especially in the areas of cognitively challenging assignments, clarity of grading criteria for

assignments, and planning practices. Also, students' background and school variables (such as staff stability) are important determinants of the students' outcomes, and the classroom dynamic is fundamental to those outcomes.

4. Conclusion

Do teachers effectively affect students' learning? It's a common assumption that the teachers make a difference in students' life, but where's the evidence? The results of the literature review suggest that, yes, there is an influence from the teachers on the students' achievements. There is a clear trend in studies regarding the influence of teachers on student achievement, with the following variables standing out: Teacher experience/qualifications, instructional practices. An important aspect that should not be overlooked by teachers is the influence of prior achievements, where it becomes clear that student success can enhance future success. Also relevant is the importance of school-related variables as enhancers of student success. Teacher experience and voluntary certification tend to identify high-quality teachers. Having been taught by a succession of high-performing and qualified teachers tends to create a positive relationship between students and their short- and long-term educational success. We must turn our attention to the cumulative and sequential teacher quality experience to which students are exposed.

Another clear trend in studies is the approach to teacher effectiveness characteristics. In this field, instructional differentiation/complexity, classroom management and organization, and planning/organization emerge as fundamental points. Teacher Personality is one of the characteristics analysed by some authors and did not predict student academic achievement in contrast to the intentionality of the teacher's actions (such as the teacher academic support or the teacher personal support) that is shown to be more important than the characteristics of his personality.

The studies indicate that the best teachers had fewer classroom disruptions, better classroom management skills, and better relationships with their students. They hold the expectations that their students can learn and believe that they have a large responsibility to help. Focusing on teachers' self-

efficacy development can be a major inclusion in the in-service training design for teachers' that can improve teacher effectiveness and achieve the goal of student outcome.

We expect that this paper helps to shed light in the issues at hand and that it contributes to clarify the importance of the teacher's work. At the core, teaching is a highly complex act with a multitude of teacher-related variables, as well as others, that affect student success. However, one clear idea emerges from the literature: the teacher has influence on student learning.

Future studies may consider collecting data from students' perceptions of what effective teachers' characteristics are and inquire teachers about their teaching strategies and their perception of which they consider to be the most effective in positively influencing the students' learning outcomes.

Despite the challenges in defining teacher effectiveness, research, including our study, underscores the crucial role teachers play in shaping students' academic success and learning outcomes. While evidence directly linking specific teacher attributes, such as experience and professional knowledge, to student achievement is limited, there is a stronger correlation between teacher behaviours — like instructional time and content coverage — and student outcomes. As we continue to explore this complex landscape, it is evident that investing in effective teaching practices is essential for fostering positive trajectories and enhancing the quality of education.

Limitations

This systematic review provides valuable insights into the relationship between teacher effectiveness and student achievement but has some limitations. The exclusive use of the Scopus database may have introduced selection bias, excluding studies published in other languages or non-indexed sources.

The methodological diversity of the analysed studies, including observational research, surveys, and secondary data analysis, enhances generalizability but also introduces variability in research design and data quality. Additionally, the reliance on cross-sectional data in many studies limits the ability

to establish causal relationships between teacher effectiveness and student achievement, highlighting the need for more longitudinal research.

Another key limitation is the geographic concentration of studies, predominantly conducted in high-income countries, particularly the United States. This may reduce the applicability of findings to diverse educational contexts. To improve global relevance, future research should explore teacher effectiveness in underrepresented regions.

Disclaimer

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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**Capítulo 2. Portuguese version of the
Teachers' Sense of Efficacy Scale:
validation Study**

Portuguese version of the Teachers' Sense of Efficacy Scale: validation Study²

Psychometric characteristics of the Portuguese version of the Teachers' Sense of Efficacy Scale (TSES)

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Abstract

Teacher self-efficacy is considered a significant predictor of positive outcomes both for students and teachers, such as student academic performance, teacher commitment or teacher-student relationships. One of the most widely used instruments for evaluating teacher efficacy beliefs is the Teacher Sense of Efficacy Scale (TSES), already adapted and validated in several studies. The present study is aimed at to evaluate the psychometric properties of the TSES (short form) in the Portuguese educational context, using a sample of 122 secondary school teachers from both public and private schools in Portugal. The performed analysis confirmed the original scale's three-factor-correlated structure, and our findings confirm that the TSES is a reliable and valid instrument, and thus potentially useful for research within the Portuguese educational context. The study's limitations are discussed, and recommendations for future research are provided.

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Keywords: Teacher self-efficacy, Scale validation, Teachers' Sense of Efficacy Scale, construct validity.

Introduction

Parents and governments should aim for all children, regardless of their circumstances, to receive a quality education that unleashes their potential. A lack of access to this opportunity can place them at a disadvantage, as subsequent educational opportunities often reflect early educational outcomes. The quest for enhanced educational equity goes beyond social justice; it serves as a strategy to efficiently use resources and enhance the reservoir of knowledge and skills that drive social, economic development, and cohesion. (OECD, 2018). In this contemporary educational setting, teachers stand out as the paramount asset. The quality of an education system depends on the quality of its teachers. The enhancement of schooling's efficacy, productivity, and fairness largely hinges on fostering a scenario where capable individuals are motivated to pursue teaching careers, delivering high-caliber instruction that ultimately advantages every student (OECD, 2018). Accordingly, in the literature, numerous studies have consistently shown that teacher efficacy is closely linked to teacher behaviours, work-related stress, job satisfaction, and student outcomes (Chan et al., 2008; Wong et al., 2010; Moè et al., 2010; Nie et al., 2012; Wolters & Daugherty, 2007). Researchers have become interested in teacher self-efficacy due to its connection to teacher efficacy beliefs, motivation, and the academic progress of students (Armor et al., (1976); Berman et al., (1977); Tschannen-Moran et al., 1998).

The concept of teacher self-efficacy, which has gained attention in research since Bandura's socio-cognitive perspective, established in 1997 and 2012, can be defined as an individual teacher's belief in their ability to perform a specific teaching task, in a given certain standard, in a particular situation (Dellinger et al., 2008). Teachers with high levels of self-efficacy beliefs exhibit greater commitment to their students and the teaching profession (Chesnut & Burley, 2015). The impact of a teacher's sense of effectiveness extends to their ambitions, their capacity for innovation, and their resilience in the face of

challenges. Teachers who believe in their abilities are more likely to remain in the educational field, dedicate more hours to instruction, exert more effort in managing their classrooms, and approach teaching with increased vigour. Furthermore, teachers with a heightened sense of efficacy are more attuned to their students' needs. They are less likely to criticize students for errors and more inclined to invest extra time with those facing difficulties, engaging more deeply in the students' educational journeys (Ho & Hau, 2004; Tschannen-Moran & Hoy, 2001).

Although the subject is clearly important, there have been some challenges in measuring teacher self-efficacy (Klassen et al., 2011; Wyatt, 2014), and also in some of research results (Klassen et al., 2011), which could be deemed conceptually questionable, potentially leading to erroneous conclusions from the study results. Previous measures of teachers' self-efficacy suffered from flawed conceptualization, such as an emphasis on ability rather than capability and a focus on external influences rather than internal beliefs. Through the creation of the Teachers' Sense of Efficacy Scale (TSES), Tschannen-Moran and Hoy (2001) sought to align the investigation with the challenges teachers face in school environment. Their objective was to establish a substantial consensus on the conceptualization and measurement of the construct, ultimately providing a defined definition for teacher efficacy. This definition revolves around a teacher's judgment of their capabilities to attain desired student outcomes. Two versions of TSES were created and validated: a short form consisting of 12 items, which is used more frequently, and a long form containing 24 items. The instrument's both forms assess three interrelated latent factors that reflect three domains of teaching: efficacy to promote student engagement, efficacy for classroom management, and efficacy in using instructional strategies. The general efficacy score was found to be more commonly used than the three task-specific efficacy scores (Tschannen-Moran & Hoy, 2001)

In recent years, the TSES has been employed in various countries and cultures, including studies by Klassen et al., (2009) in Canada, Ruan et al., (2015) in Asian countries, and Tsigilis et al., (2010) in Greece. Most studies have used confirmatory factor analysis (CFA) to examine the construct validity of the TSES, and they have generally confirmed the three-factor model proposed in the initial

study. However, to improve the model's goodness-of-fit, some studies have allowed for the correlation of errors between certain items (Klassen et al., 2009) or removed items that did not fit the original model (Tsigilis et al., 2010; Ruan et al., 2015). At the item level, it is crucial to consider cultural influences in teacher self-efficacy research, as certain words may have distinct meanings in different cultures. Ruan et al. (2015) discovered that the item "How well can you establish a classroom management system with each group of students?" did not align with school systems in Asian countries. Additionally, some studies have identified a high correlation between individual dimensions of teachers' self-efficacy due to cross-loadings (Nie et al., 2012; Scherer et al., 2016).

International Insights into the "Teachers' Sense of Efficacy Scale"

In Singapore, Nie et al. (2012) conducted research with 109 primary and secondary school teachers. This study presented a modified version of the scale that included three distinct dimensions: efficacy in instruction, efficacy in classroom management, and efficacy in motivation. The altered sub-scales showed strong reliability in terms of internal consistency. The results of the factor analysis suggested that it might be feasible to combine certain beliefs about teacher efficacy into a single comprehensive factor. The study found strong evidence for convergent validity, but the evidence for discriminant validity was weaker. Confirmatory factor analysis (CFA) was utilised both to corroborate the findings of the exploratory factor analysis (EFA) and to examine the fit of the data with the theoretical model proposed. The confirmatory factor analysis pinpointed three factors, each with eigenvalues above 1, which together accounted for 75.66% of the overall variance. The primary factor was related to efficacy in motivational strategies, followed by the second factor, efficacy in classroom management, and the third factor, efficacy in instructional strategies. In summary, the results imply that when forecasting outcomes, it is recommended to use a composite self-efficacy score that is based on specific beliefs about teacher efficacy in various tasks.

The research conducted by Ninkovic & Knezevic-Florin, (2018) in Serbia examined the reliability, factor structure, and criterion validity of the 12-item Teachers' Sense of Efficacy Scale (TSES) within a cohort of 452 Serbian teachers. The TSES scores showed internal consistency, with estimates ranging from .77 to .88. Confirmatory factor analysis revealed that a three-factor model of the TSES aligned most closely with the empirical data. The scale's criterion validity was affirmed by linking its subscales to teacher job satisfaction. The study also observed that primary school teachers reported higher self-efficacy in engaging students compared to their peers in secondary and high schools. There were no significant differences in self-efficacy related to gender or teaching tenure. These findings endorse the TSES as a reliable and valid instrument for measuring teacher efficacy.

Htang (2018) research in Myanmar encompassed 101 in-service teachers across three educational tiers: public high schools, education colleges, and universities. The study affirmed the short form of the Teachers' Sense of Efficacy Scale (TSES) as an appropriate instrument for gauging the self-efficacy of Myanmar's in-service teachers, with all subscales showing adequate reliability. Additionally, an ANOVA analysis indicated significant differences in classroom management efficacy between high school teachers and those teaching at the university level. Regarding academic qualifications, teachers holding professional degrees reported higher efficacy than their counterparts with academic degrees.

Salas-Rodríguez et al., (2021) study in Mexico was conducted to evaluate the reliability, internal validity, and external validity of the Spanish-adapted short form of the Teachers' Sense of Efficacy Scale (TSES). The research sampled 190 primary and secondary educators from 25 private institutions. The construct validity analysis verified the presence of the three interrelated factors that the original scale exhibited. Furthermore, the study found evidence for criterion validity by identifying a relationship between teachers' self-efficacy and their job satisfaction. The study also noted differences in self-efficacy based on variables such as the teachers' gender, their years of experience, and the educational levels they taught.

Taking into consideration the aforementioned the main aim of this study is to assess the psychometric characteristics of the Teacher Sense of Efficacy

Scale short form, developed by Tschannen-Moran & Hoy, (2001), when applied to a sample of Portuguese teachers

Present Study

The overall purpose of this study was to adapt and conduct the analysis of the psychometric characteristics of the Teacher's Sense of Self-Efficacy Scale (TSES, Tschannen-Moran & Hoy, (2001)) in Portuguese speakers while it is tested on a sample of public and private school teachers in Portugal. To achieve this purpose, we set out to determine if the three-dimensional factor-analytic solution presented by the original short form of the TSES is replicated in a sample of Portuguese teachers. We hypothesised that the original structure of the scale, which assumes the existence of 3 interconnected latent factors, will be confirmed on the sample of Portuguese teachers. Internal validity evidence will be examined by conducting a CFA to analyse whether the items load on their original factor, and that the Years of experience will affect self-efficacy of teachers; self-efficacy will increase during the first years of the career but will decrease during later stages. Finally, the current research may contribute to the further internationalisation of this field of research.

Materials And Methods

1. Participants and Procedure

The convenience sample for this study consisted of 122 teachers from secondary teaching schools of the Portuguese educational system, where 40.2% were teaching at public schools and 59.8% were teaching at private schools. That total includes 87.7% women and 12.3% men. Concerning service time, 45.9% had between 11 to 20 years of teaching time, 34.4% had over 20 years, 10.7% had less than 5 years and 9% had between 6 and 10 years (table 6). Data were collected in 2020 and 2021 using a Microsoft Forms questionnaire. An online survey was conducted. The schools were mailed the URL for the survey, with a request to send it to every teacher in the school, accompanied by a letter explaining the nature and general aim of the study and directions on how to do

the online survey. Participants were aware of the purpose of the study and completed the questionnaire anonymously. Teacher self-efficacy was measured using the TSES short form (Tschannen-Moran & Hoy, 2001) with the permission of one of the authors of the scale (AWH).

Table 5 Frequencies of School, Gender, and Years of Service

Category	Freq.	%	Valid %	Cumulative %
Frequencies of School				
Public	49	40.2	40.2	40.2
Private	73	59.8	59.8	100.0
Total	122	100.0	100.0	-
Gender				
Female	107	87.7	87.7	87.7
Male	15	12.3	12.3	100.0
Total	122	100.0	100.0	-
Years of Service				
0-5	13	10.7	10.7	10.7
6-10	11	9.0	9.0	19.7
11-20	56	45.9	45.9	65.6
+20	42	34.4	34.4	100.0
Total	122	100.0	100.0	-

Note. Freq. = Frequency; % = General percentage; Valid % = Valid percentage; Cumulative % = Cumulative percentage.

2. Translation of items and spoken reflection

The Portuguese version of the TSES was established using the translation and back-translation procedure. First, a native Portuguese-speaking translator translated the TSES into Portuguese. Second, there was conducted a re-translation of the scale from Portuguese to English. Third, the authors and the professionals reviewed both versions item by item to detect semantic and/or conceptual differences between the original and translated versions. Finally, six Portuguese teachers revised the TSES Portuguese version, the opinions were discussed, and a consensus was reached for each item. Based on the listed procedures it reached a final version and concluded that no further changes were necessary. Table 7 shows the TSES Portuguese version.

Table 6 Portuguese and original versions of the Teachers' Sense of Efficacy Scale (TSES)

TSES Portuguese version					Original TSES (Tschannen-Moran & Hoy, (2001))								
1	2	3	4	5	1	2	3	4	5	6	7	8	9
Inexistente	Fraca	Suficiente	Forte	Muito forte	Nothing	Very little	Some	Influence	Quite a bit	A great deal			
Eficácia na interação com alunos					Efficacy for student engagement								
2. Avalie a sua capacidade para motivar os alunos que demonstram pouco interesse no trabalho escolar.					How much can you do to motivate students who show low interest in school work?								
4. Avalie a sua capacidade para ajudar os alunos a valorizarem a aprendizagem.					How much can you do to help your students value learning?								
7. Avalie a sua capacidade para acalmar um aluno perturbador.					How much can you do to calm a student who is disruptive or noisy?								
11. Avalie a sua capacidade para colaborar com as famílias, delineando estratégias conducentes ao sucesso dos alunos.					How much can you assist families in helping their children do well in school?								
Eficácia nas estratégias didáticas					Efficacy for instructional strategies								
5. Avalie a sua capacidade para construir itens didaticamente adequados e pertinentes para os seus alunos.					To what extent can you craft good questions for your students?								
9. Avalie a sua capacidade para utilizar instrumentos de avaliação diversificados.					To what extent can you craft good questions for your students?								
10. Avalie a sua capacidade para apresentar uma explicação ou um exemplo alternativo quando os alunos têm dúvidas.					To what extent can you provide an alternative explanation or example when students are confused?								
12. Avalie a sua capacidade para implementar estratégias de aprendizagem diferenciadoras na sala de aula.					How well can you implement alternative strategies in your classroom?								
Eficácia na gestão da sala de aula					Efficacy for classroom management								
1. Avalie a sua capacidade para controlar o comportamento perturbador na sala de aula.					How much can you do to control disruptive behavior in the classroom?								
3. Avalie a sua capacidade para convencer os alunos de que podem obter bons resultados no trabalho escolar.					How much can you do to get students to believe they can do well in school work?								
6. Avalie a sua capacidade para assegurar o respeito das regras de sala de aula pelos alunos.					How much can you do to get children to follow classroom rules?								
8. Avalie a sua capacidade para estabelecer um sistema de gestão da sala de aula de acordo com o desempenho dos alunos.					How well can you establish a classroom management system with each group of students?								

3. Psychometric studies

The short version of the questionnaire by Tschannen-Moran & Hoy (2001) was translated by a professional translator to ensure the faithfulness of the Portuguese version, and it was later applied to a group of teachers to verify whether the items were easy to understand. The final questionnaire resulted from the suggested changes. The instrument has 12 items requiring an answer using a five-point Likert scale, from “Nothing” to “A great deal”. The 12 items are related to the constructs *Efficacy for student engagement*, *Efficacy for instructional strategies* and *Efficacy for classroom management*, a division presented by the authors in the original version. The final text of the 12 items can be found in Table 7.

To conduct the study on the psychometric characteristics of the Teacher’s Sense of Efficacy Scale – short version – a research study was developed among a population of Portuguese teachers where an initial Exploratory Factor Analysis (EFA) was performed using the Principal Components Method along with varimax orthogonal rotation, constrained at three factors, to verify whether the instrument’s factor structure was maintained as per the authors’ original structure. If the structure was not maintained, the next step would be to consider this model as concurrent to the original model, analysing the models by Confirmatory Factor Analysis (CFA), using Structural Equation Modelling. Internal consistency studies will also be presented.

In this design, the statistical assumptions to perform an EFA shall be tested, namely, normality tests (kurtosis and skewness), multicollinearity and the rotated correlation matrix analysis, verifying whether the number of items is adequate for the analysis. The instrument’s reliability shall be assessed via the internal consistency analysis, using Cronbach’s alpha values. These analyses shall be performed using the SPSS statistics software, version 20.

The structural equation model shall be tested by EQS 6.1 software means, the maximum-likelihood estimation method will be employed if the distributions are deemed statistically normal; however, if the limits fall outside the normal range, the robust maximum-likelihood estimation method (MLR) will be applied. In the latter scenario, the presented results will be adjusted according to the approach proposed by Satorra (cited by Satorra & Bentler, 2001). Furthermore,

Yuan and Satorra (2007) advise against the use of the maximum-likelihood method in cases where distributions exhibit problematic levels of kurtosis and skewness. The fit indexes to be presented are as follows: the chi-squared, with corresponding degrees of freedom and significance value (as an corrected alternative to non-normal distribution, the Satorra-Bentler scaled chi-square ($Sb\chi^2$) shall be presented); the Bentler-Bonett's non-normed fit index (NNFI), the Comparative Fit Index (CFI), the Bollen's Fit Index (IFI), the McDonald's Fit Index (MFI), the Root Mean Square Error Of Approximation (RMSEA) and its Confidence Interval at 90% ($IC90\%_{RMSEA}$). The Akaike Information Criteria (AIC) will be used for model comparison in case of non-nested models (Werner & Schermelleh-Engel, 2010). Alternatively, a chi-squared difference test shall be performed either with the normal chi-square or using the scaled difference test if the results are indicative of concurrent nested models.

Handling of Missing Data

In this study, missing data were not considered in the analysis. Given that the Teachers' Sense of Efficacy Scale (TSES) requires responses to all items to generate a valid score, any questionnaire with a missing response was deemed invalid. Consequently, participants who did not complete all items were excluded from the final dataset. This approach ensured that all included responses represented complete and analyzable data.

Exploratory Factor Analysis (EFA)

An Exploratory Factor Analysis (EFA) was performed in the 12 items of the short version of the Teacher's Sense of Efficacy Scale (TSES) by means of Principal Components Method and using the varimax orthogonal rotation. First, the distribution normality analysis was performed on the instrument's items. While all skewness values were within normality limits ($S[-1.03, .01]$), six of the TSES items provided Kurtosis values above out of the -1 and +1 range ($K[2.54, .06]$), although for EFA purposes the analysis can be computed. The value for the correlation matrix determinant [$\det(X)$] was of .011, indicating a nonexistence of multicollinearity, another assumption to perform the EFA. Kaiser-Meyer-Olkin

sample adequacy measure was over .70 (KMO = .81), indicating that items are enough for performing the EFA studies. The result from Bartlett's sphericity test indicated that the correlation matrix is significantly different from a matrix where all correlations are zero ($\chi^2 = 523.16$, $p = .00$), so the analysis can be also performed. Ideally, the communality values would be higher than .5, which was not the case for items 10 e 11. During the analysis, a three-factor solution was requested, considering the instrument assumes the existence of three latent constructs (Leech et al., 2005), namely, *Efficacy for student engagement* (ESE), *Efficacy for instructional strategies* (EIS) and *Efficacy for classroom management* (ECM). After the varimax orthogonal rotation with Keiser's normalization, the first factor explains 22.58%, the second factor explains 19.12%, and the third factor explains 18.89% of the variance. The obtained solution explains a total variance of 60.58%. Table 8 is presenting the results.

Table 7 Factor Loadings for a 3 Factors Varimax rotated Solution Varimax

Items	Factor Loads			Communalities
	EIS	ESE	ECM	
1. How much can you do to control disruptive behavior in the classroom?			.87	.78
2. How much can you do to motivate students who show low interest in school work?		.70		.58
3. How much can you do to get students to believe they can do well in school work?		.84		.77
4. How much can you do to help your students value learning?		.83		.78
5. To what extent can you craft good questions for your students?	.65			.43
6. How much can you do to get children to follow classroom rules?		.42	.63	.59
7. How much can you do to calm a student who is disruptive or noisy?			.85	.77
8. How well can you establish a classroom management system with each group of students?	.76			.66
9. To what extent can you craft good questions for your students?	.75			.58
10. To what extent can you provide an alternative explanation or example when students are confused?	.52		.31	.41
11. How much can you assist families in helping their children do well in school?	.47		.35	.40
12. How well can you implement alternative strategies in your classroom?	.70			.53
Set values	4.68	1.50	1.09	
Variance %	22.58	19.12	18.89	

Note: the highlighted numbers are factor load values from items integrating the original factor structure. Item no. 8, only saturates for the “Efficacy for instructional strategies” dimension/factor

According to Costello e Osborne, (2005), when there are cross-loadings of .32 or higher, the decision to remove the item can be taken if the loading is of .50 or higher and also if there is a difference between loadings that is higher than .10. When analysing Table 8, this occurrence can be seen for items 6 and 10, with the highest saturation on the factor of the original factorial structure. As for item 11, the factor load is low in both cases and there’s loading on the original factor, which may show that the initial factor structure was not very adequate or that an item was not properly understood by the respondents of the Portuguese version of the instrument. Item no. 8 saturates only in one of the factors which is not the original one. Taking into account these results and the aforementioned criteria, an internal consistency analysis was performed to assess whether items adequately measure the construct they’re supposed to assess, with the original structure and the one resulting from the EFA.

Internal consistency

The internal consistency values were calculated for each of the original scales, and results are presented using the alfa values if item deleted or of item maintenance testing both models. (*consult* Table 9).

Table 8 Internal Consistency Values (Cronbach’s alpha)

	M	SD	α if the item is excluded	α if the item is included
Scales				
Items				
Efficacy for student engagement ($\alpha = .76$)				
2. How much can you do to motivate students who show low interest in school work?	3.9	.60	.69	
4. How much can you do to help your students value learning?	4.2	.68	.65	
7. How much can you do to calm a student who is disruptive or noisy?	4.2	.70	.66	
11. How much can you assist families in helping their children do well in school?	3.9	.85	.80	
Efficacy for instructional strategies ($\alpha = .67$)				
5. To what extent can you craft good questions for your students?	4.3	.63	(.65)	.74

9. To what extent can you craft good questions for your students?	4.07	.69	(.55)	.69	
10. To what extent can you provide an alternative explanation or example when students are confused?	4.61	.55	(.63)	.74	
12. How well can you implement alternative strategies in your classroom?	4.00	.73	(.61)	.71	
8. How well can you establish a classroom management system with each group of students?	3.98	.64	.67		.76
Efficacy for classroom management ($\alpha = .763$)					
1. How much can you do to control disruptive behavior in the classroom?	4.14	.68	.67		
3. How much can you do to get students to believe they can do well in schoolwork?	4.46	.63	.70		
6. How much can you do to get children to follow classroom rules?	3.91	.77	.64		
8. How well can you establish a classroom management system with each group of students?	3.98	.64	.79		

Note: the highlighted item originally integrated the “Efficacy for classroom management” factor. However, this item saturated at the “Efficacy for instructional strategies” factor in the Exploratory Factor Analysis. In the column for α if the item is excluded, under the “Efficacy for instructional strategies”, inside parenthesis is the analysis value for the initial 4 items, followed by the analysis value integrating item no. 8. M = Mean, SD = Standard Deviation, α = Cronbach’s alpha.

In the ESE subscale, it is possible to verify that the elimination of item no. 11, which was crossloading at low values, which were not its original factor, allows the Cronbach’s alpha value to increase to a good internal consistency cutoff, with the alpha value raising from .76 (reasonable) to .80 (good). In the case of the EIS subscale, two analyses were performed. The first one maintained only the 4 indicators from the original scale, presenting a low alpha value ($\alpha = .67$). When the analysis was repeated including item no. 8, the Cronbach’s alpha value became .77, i.e., reasonable, which led to the decision of maintaining it in the EIS factor. Lastly, the internal consistency analysis was performed for the 4 indicators of the “Efficacy for classroom management”. Although presenting a reasonable Cronbach’s alpha value, by removing item no. 8 – which did not saturate in its factor (at least with a value of .3 or higher) – there was an increase of the alpha to .79. This is .01 away from qualifying as good, which suggests it should be removed (for qualitative values corresponding to Cronbach’s alpha quantitative values, it is advisable to use the grid by Pestana & Gageiro (2008).

Decision about the exclusion/inclusion of items in the instrument's initial factors from the Exploratory Factor Analysis and the Internal Consistency Analysis

According to the results obtained both in the EFA and the internal consistency analysis, the factor structure found is very similar to the original one, where the EIS subscale has 5 indicators (adding item no. 8 to this subscale), the ESE maintains 3 indicators and loses item no. 11, and the ECM subscale, after the inclusion of item no. 8 in the EIS subscale, and due to the absence of significant factor load in its factor, maintains the 3 items from the initial structure.

This way, the model resulting from the EFA was considered as an alternative to the original model, testing which of both is the best methodologic solution.

Confirmatory Factor Analyses for a comparison between the original model and the model obtained from the EFA

To further complete the instrument's psychometric characteristic analysis, as mentioned in the methodology, a comparison was performed between the original model and the concurrent model resulting from EFA using Structural Equation Modelling methodology. Considering that the sample shows variables/indicators that are not distributed according to the normal curve, CFAs were computed using the maximum-likelihood estimation robust method, indicated in these situations (Satorra, 1990, as quoted by West, Finch and Curran in 1995). The analysis was performed using the EQS 6.1 statistical package, as it enables the application of this correction in its analysis.

In CFAs, the implied factors were fixed in 1, enabling a free estimation of the regression parameters between factor and observed variable. Just as in the original model, a moderate correlation between implied factors is presumed. The models are non-nested, given that the EFA model does not have the same indicators as the original model. As such the comparison between the concurrent models will use the Akaike Information Criteria, considering the lowest value model to be the best fit. Results showed that every indicator was significant to the respective factor, regardless of the considered model with all indicators

presenting significant p values ($p < .05$) for their factor. Table 10 shows the comparative results and the fit indexes from the concurrent models.

Table 9 Competing Models Fit Indexes

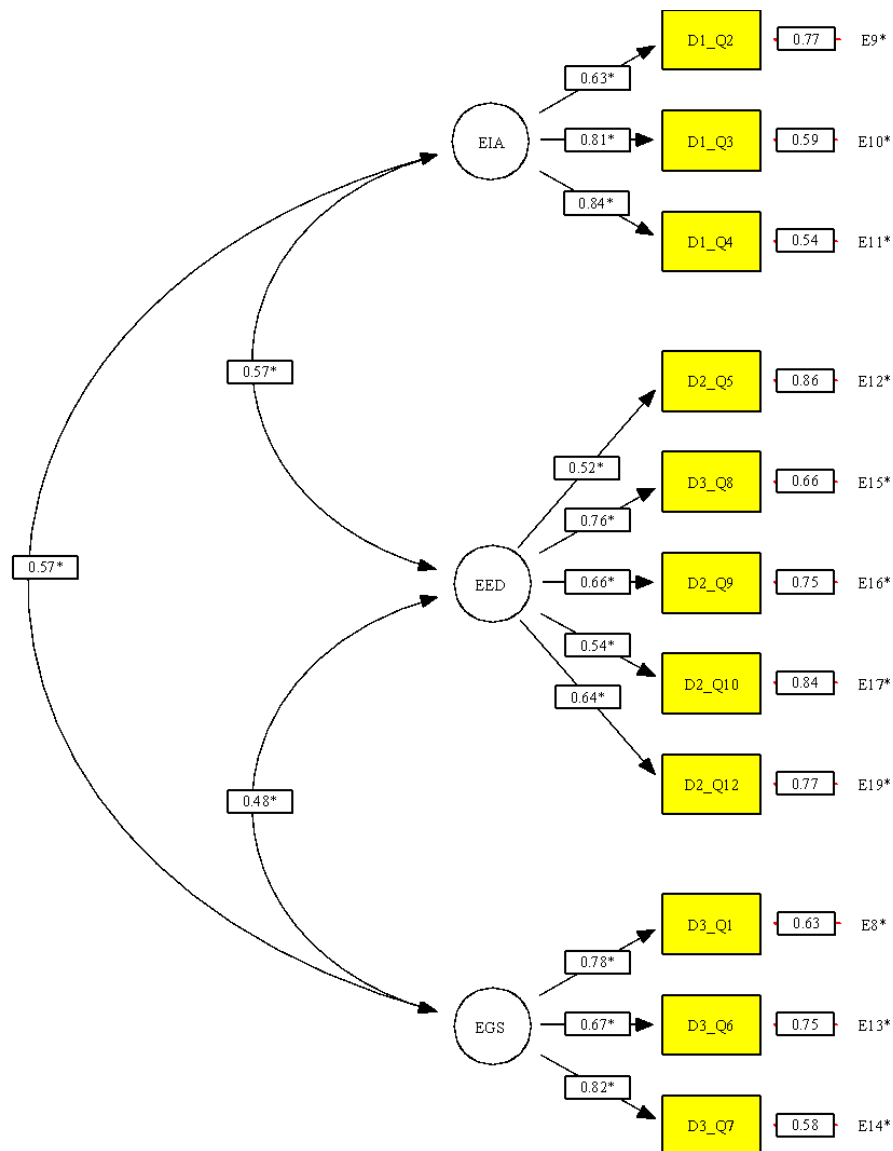
Fit Indexes for Maximum-Likelihood Estimation Robust	Original Model	EFA Model
$SB\chi^2$	92.42	51.95
df	51	41
p	.000	.117
Bentler-Bonett's Non-normed Fit Index (NNFI)	.85	.96
Comparative Fit Index (CFI)	.88	.97
Bollen's Fit Index (IFI)	.89	.97
McDonald's Fit Index (MFI)	.84	.96
Root Mean Square Error of Approximation (RMSEA)	.08	.05
Confidence Interval at 90% of RMSEA ($IC_{90\%RMSEA}$)	[.05, .11]	[.00, .08]
Akaike Information Criteria (AIC)	-9.58	-30.05

Note: The method used was Maximum-Likelihood Estimation Robust. $SB\chi^2$ = Satorra-Bentler's Scaled Chi-Squared; df = degrees of freedom; p = significance probability value; EFA = Exploratory Factor Analysis.

Comparing the values of AIC – a parsimony fit index–, which being negative indicate a higher value for the original model than of the concurrent EFA model. Therefore, it may be inferred that data fits best on the latter model (Pilati & Laros, 2007). The best fitted model is also the most parsimonious. The value of $SB\chi^2$ from the EFA model is substantially lower than the original model, and while the original model does not show statistical significance, the EFA model shows a value of $p = .12$. The fit indexes shall be interpreted next (Bentler, 1990), presenting a set of indexes to better evaluate the models (Tabachnick et al., 2013). At the level of relative fit indexes (quality assessment of a model in relation to the independent model), the NNFI value of the EFA model is considered very good ($NNFI > .95$) when compared to the original model, which is merely acceptable. The CFI corrects the underestimation for small samples, and the value obtained is considered very good ($CFI > .95$) for the EFA model when compared to the original model, which is merely acceptable. At the level of indexes that assess the populational discrepancies, the RMSEA – an absolute index that tries to correct the tendency of the χ^2 statistic in rejecting models with large sized samples – and its respective confidence interval show that the fit is adequate for very good ($RMSEA \leq .05$) once again in the EFA model when compared to the value presented for the original model, which is considered

mediocre, but none of the difference between the intervals of RMSEA was equal or below .05, an indication of best fit. The IFI – an incremental fit index – is also above .90 (the value that is considered acceptable), when compared to the original model (.89). The MFI – an absolute fit index – indicates a good fit because it's above .90 in the EFA model when compared to the original model (.84) (Plumed et al., 2015). Therefore, it is possible to infer a higher adjustment of the data to the model tested through EFA, when compared with the original one. The model for the Portuguese version of the Teacher's Sense of Efficacy Scale (TSES) has three factors, positively and moderately correlated among themselves (r values between .48 and .57), where the Efficacy for instructional strategies (EIS) dimension or factor is composed of items or indicators no. 5, 8, 9, 10 and 12, the Efficacy for student engagement (ESE) dimension or factor is composed of items or indicators no. 2, 3 and 4, and the Efficacy for classroom management (ECM) dimension or factor is composed of items or indicators no. 1, 6 and 7. The instrument's factor structure, covariance and regression values are presented in Figure 4.

Figure 2 The instrument's factor structure, covariance and regression values



Factor structure of the Teacher's Sense of Efficacy Scale, Portuguese version, after the instrument's psychometric analyses. The values from factor regressions, errors and covariances presented are standardised. All items are significant to their respective factors at $p \leq .05$.

The descriptive statistics for the TSES in a Portuguese sample (Table 11) indicates that the teachers in our study reported high levels of self-efficacy in all specific dimensions, with mean scores ranging between 4.14 and 4.20. They showed the greatest confidence in their ability to influence student engagement, while their confidence in instructional strategies was comparatively lower, although the results are very similar.

Table 10 Descriptive statistics for TSES factors

	N	Minimum	Maximum	Mean	Std. Deviation
IS	122	2	5	4.14	.559
SE	122	3	5	4.20	.464
CM	122	2	5	4.17	.559
TSES	122	3	5	4.18	.416
Item 10. (EED)	122	3	5	4.61	.554
Item 6. (EGS)	122	1	5	3.91	.771
Valid N (listwise)	122				

IS - Efficacy for instructional strategies dimension; SE - Efficacy for student engagement dimension; CM - Efficacy for classroom management dimension; TSES - global mean for the Teacher's Sense of Efficacy Scale.

Regarding each item, individually, the number 10. "To what extent can you provide an alternative explanation or example when students are confused?" have the highest mean score with 4.61 (*instructional strategies dimension*); while the lowest score is in the item 6 "How much can you do to get children to follow classroom rules?" f (*classroom management dimension*) with a score of 3.91.

Discussion

The main aim of this study is to assess the psychometric characteristics of the Teacher Sense of Efficacy Scale short form, developed by Tschannen-Moran & Hoy, (2001), when applied to a sample of Portuguese teachers. The results confirmed the original three-factor structure of the scale that comprises the dimensions): efficacy for student engagement, efficacy for classroom management, and efficacy for instructional strategies (Tschannen-Moran & Hoy, (2001) and confirming the generalizability of the structure and thus also the construct validity of the scale.

Similar to other studies (Ruan et al., 2015); Tsigilis et al., 2010), we used modification indices for the reason that some items resulted in substantial misfit. In this study, the inaccuracies were present in items 8 ("How well can you establish a classroom management system with each group of students?") which belonged to the EGS subscale and was recoded into subscale EED and 11 ("How much can you assist families in helping their children do well in school?") which belonged to the EIA subscale but was discarded.

The confirmation of the three-factor key goes in line with the findings in Western (Klassen et al., 2009) and Asian countries (Ruan et al., 2015) and confirms that the Portuguese teachers share the same patterns in their activities. This results are in line with Vieluf et al., (2013) that suggests that teacher self-efficacy has a similar manifestation despite the different cultural environments and regardless of the characteristics of national education system. Nevertheless, the differences observed in the items fit could be interpreted based on specificities of the social and cultural context, and school conditions.

Compared to the original United States TSES (Tschannen-Moran & Hoy, 2001) sample (which included 410 teachers from diverse sociodemographic backgrounds), our sample of Portuguese teachers exhibited higher overall efficacy (M=4.18, SD=0.42; M=3.9, SD=0.98) and in the dimension of student engagement (M=4.2, SD=0.47 ;M=4.0, SD=1.2). A similar trend was noted in classroom management (M=4.17, SD=0.56; M=3.7, SD=1.2), with our sample demonstrating greater efficacy. The efficacy for instructional strategies in our sample (M=4.14, SD=0.56) was also on par with the original study (M=4.1, SD=1.2).

In comparison to the international research, our sample scored higher in student engagement than studies from Serbia (Ninkovic & Knezevic-Floric, 2018) (M=3.8, SD=1.13), Singapore (Nie et al., 2012) (M=3.98, Sd=0.68), and Myanmar (Htang, 2018) (M=3.23, SD=0.7), but lower than Mexico (Salas-Rodríguez et al., 2021) (M=4.44, SD=0.81). For classroom management, our results surpassed those from Serbia (M=4.03, SD=1.20) and Myanmar (M=3.83, SD=0.71) but were lower than Mexico (M=4.5, SD=0.78) and Singapore (M=4.23, SD=0.69). In instructional strategies, our outcomes were above Singapore (M=3.88, SD=0.66) and Myanmar (M=3.56, SD=0.65) but did not reach the levels of Mexico (M=4.5, SD=0.72) and Serbia (M=4.19, SD=0.94). This comparative analysis indicates that the results from our sample of Portuguese teachers align with international studies on teacher self-efficacy, confirming the ability to measure this construct in various contexts.

To reinforce the discussion on the cross-cultural validity of the Portuguese TSES adaptation, Table 12 presents a comparison of the factor structures and key psychometric properties from various international adaptations, including Serbia, Mexico, Singapore, and Myanmar.

Table 11 Comparative Factor Structures and Psychometric Properties of TSES International Adaptations

Country	Sample Size	Factor Structure	Cronbach's (Subscales)	Alpha	Model (CFI)	Fit	Index
Portugal	122	3-factor model	ESE: 0.76, EIS: 0.77, ECM: 0.79		0.97		
Serbia	452	3-factor model	ESE: 0.77, EIS: 0.83, ECM: 0.88		0.96		
Mexico	190	3-factor model	ESE: 0.81, EIS: 0.84, ECM: 0.85		0.98		
Singapore	109	Modified 3-factor model	ESE: 0.75, EIS: 0.78, ECM: 0.80		0.95		
Myanmar	101	3-factor model	ESE: 0.70, EIS: 0.74, ECM: 0.77		0.94		

ESE = Efficacy for Student Engagement, EIS = Efficacy for Instructional Strategies, ECM = Efficacy for Classroom Management

As shown in Table 12, the factor structures remain consistent across international adaptations, supporting the cross-cultural validity of the TSES. However, minor variations in factor loadings and reliability coefficients suggest potential cultural influences on how self-efficacy is perceived by teachers in different educational contexts.

These methodological refinements strengthen the manuscript by clarifying data handling procedures, ensuring appropriate statistical assumptions, and visually reinforcing the cross-cultural discussion of TSES validation.

When considering the dimensions of teacher self-efficacy we found that the teachers in Portugal mostly believe in their own capabilities to deliver successful instructions and the lowest result present in self-efficacy in Portuguese teachers is the domain of student engagement. The overall average values obtained in the subscales are approximately to those obtained in previous validation studies (Tschannen-Moran & Woolfolk Hoy, 2001; Salas-Rodríguez et al., 2021). Improving the educational system's quality requires a multidimensional tool to assess teacher self-efficacy, which is a crucial step in designing relevant professional development for teachers. The use of the TSES short form on the sample of Portuguese teachers provides measures that help identify domains where teachers lack confidence in their competencies. This facilitates the comparison of results obtained in the Portuguese educational context with those of foreign studies.

Practical Implications for Portuguese Educators and Policymakers

While this study highlights the utility of the TSES for professional development, its application in Portuguese educational settings could be further expanded. The validated instrument offers valuable insights into teachers' perceived efficacy across different instructional domains, making it a crucial tool for designing targeted interventions and training programs.

Portuguese policymakers and educational administrators can use TSES data to identify areas where teachers feel less confident, allowing for the development of tailored professional development initiatives. For instance, if findings indicate lower self-efficacy in classroom management, targeted workshops on behavior management strategies and conflict resolution could be introduced. Similarly, teacher training institutions can integrate TSES results into their curriculum to ensure that prospective educators receive training that aligns with areas where they typically report lower self-efficacy.

Additionally, school leaders can utilize TSES assessments to create mentorship programs, pairing experienced teachers with those who report lower efficacy in specific domains. Such initiatives can foster collaborative learning and professional growth, ultimately contributing to higher teacher retention rates and improved student outcomes.

By leveraging the TSES as a diagnostic tool, Portuguese educators and policymakers can implement evidence-based strategies to strengthen teacher self-efficacy, enhance instructional quality, and promote more effective teaching practices nationwide.

Limitations And Future Directions

Although the results of our study are promising, some limitations need to be addressed. One of the limitations of this study pertains to the demographic composition of the sample, which predominantly consists of female teachers (87.7%) and educators from private schools (59.8%). These characteristics may influence the generalizability of the findings, particularly in relation to male teachers and those working in public school settings. The high

proportion of female participants aligns with the broader trends in the teaching profession, where women often constitute the majority of educators, particularly in primary and secondary education. However, previous research has indicated that gender can play a role in shaping teachers' self-efficacy beliefs. Studies suggest that female teachers may report higher efficacy in fostering student engagement and instructional strategies, while male teachers often express greater confidence in classroom management (Klassen & Chiu, 2010). Given that self-efficacy beliefs influence teaching behaviors and student outcomes, the gender imbalance in our sample could have contributed to an overrepresentation of certain efficacy dimensions over others.

Similarly, the predominance of teachers from private schools introduces potential contextual influences that warrant consideration. Teachers in private schools often experience different classroom conditions, institutional support structures, and student demographics compared to their public-school counterparts. Research indicates that private school teachers may report higher levels of autonomy, access to resources, and smaller class sizes, all of which could contribute to heightened self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

Given these demographic characteristics, it is essential to interpret the results of this study with caution, particularly in their applicability to more diverse educational settings. Future research should aim to include a more balanced representation of male teachers and a greater proportion of public-school educators to assess whether the factor structure and self-efficacy patterns observed in this study hold across different contexts. Additionally, conducting subgroup analyses to explore potential differences in self-efficacy beliefs between male and female teachers, as well as between private and public-school educators, would provide deeper insights into the contextual factors influencing teacher self-efficacy.

Another limitation of this study is the potential influence of the COVID-19 pandemic on teachers' self-efficacy perceptions, as data were collected during 2020–2021. The pandemic introduced unprecedented challenges to the teaching profession, including abrupt shifts to remote instruction, increased workloads, and heightened stress levels. These factors may have affected teachers'

confidence in their instructional strategies, classroom management, and ability to engage students effectively.

Research suggests that teachers faced significant obstacles in adapting to digital platforms and maintaining student motivation in virtual settings. As a result, self-efficacy levels reported in this study may reflect the unique pressures of the pandemic rather than long-term trends in Portuguese education. Future research should consider longitudinal studies to examine whether these self-efficacy perceptions change as educators transition back to conventional classroom environments or adapt to hybrid teaching models.

The purpose of this study was to validate the Portuguese-TSES by preserving the features of the original validation sample and its internal structure. Given the differences in the short-TSES scores observed between our sample and others, as well as the characteristics of our sample, we recommend that future studies include larger samples to test alternative factor models.

In summary, this study emphasizes its importance not only through its contribution to a comprehensive comprehension of teacher practices but also by validating a highly pertinent tool for assessing and improving the evaluation of educators. This is particularly noteworthy as it addresses a gap identified in the Portuguese educational context.

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**Capítulo 3. Portuguese version of the
Student Evaluation of Learning and
Teaching Questionnaire (SELTQ): validation
Study**

Portuguese version of the Student Evaluation of Learning and Teaching Questionnaire (SELTQ): a validation Study.³

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Abstract

Assessing teaching effectiveness is crucial for improving education quality and student assessments appears as a valuable method to enhance instructional practices. In this study, we evaluated the psychometric properties of the Student Evaluation of Teaching Quality (SELTQ) in the Portuguese educational context. Our sample included 475 secondary school students from a private school in Portugal. Although the original four-factor structure was not confirmed, our findings support the reliability and validity of the adapted SELTQ model. This instrument holds promise for future research in the Portuguese educational context, with a focus on student learning as a means of evaluating teaching quality. We also discuss study limitations and provide recommendations for further research.

Keywords: SETLQ, Scale validation, construct validity, students' perceptions, Teaching evaluation questionnaire, Student learning experiences

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Introduction

Teaching effectiveness is a cornerstone of educational excellence, characterized by an educator's ability to foster deep learning, critical thinking, and student success. Various models aim to capture this complex concept, combining instructional quality with measurable outcomes (Cruickshank & Haefele, 2001). One particularly insightful framework is the Student Evaluation of Learning and Teaching Questionnaire (SELTQ), which emphasizes key dimensions such as instructional clarity, assessment and feedback, student engagement, and the overall learning environment. These dimensions serve as critical variables in understanding and evaluating how effectively teaching practices support student learning and satisfaction (Abrami et al., 1990; Marsh, 1987).

Understanding teaching effectiveness from the students' perspective is especially crucial, as students are the primary recipients of educational efforts. Research indicates that students assess teaching effectiveness by reflecting on their experiences within these key dimensions, offering a unique and valuable lens through which the impact of teaching can be measured (Richardson, 2005). Their evaluations often focus on how clearly instructors communicate concepts, the relevance and timeliness of feedback, the extent to which they feel engaged and supported, and the quality of the learning environment (Feldman, 2007). These assessments are not merely reflections of student satisfaction; they provide actionable insights into how teaching practices influence learning outcomes.

Analysing how students perceive and assess teaching effectiveness offers educators a deeper understanding of what works in the classroom and where improvements are needed. Tools like the SELTQ empower students to voice their experiences, making them active participants in the process of educational enhancement. This feedback is invaluable for driving continuous improvement in teaching methods, ultimately leading to a more effective and responsive educational system (Biggs & Tang, 2011). Additionally, Zerihun et al., (2012) emphasize five basic dimensions within the context of quality in higher education: the organization and presentation of courses by teachers, feedback given and received, the degree of student involvement in the learning process, students'

judgments of their engagement, and the quality of evaluation and assessment practices. Students perceive an effective teacher as one who possesses a deep understanding of the subject, is approachable, and engages in meaningful communication with them (Zerihun et al., 2012).

In this context, the present study aims to make a significant contribution to the analysis and validation of student's perspectives about the factors that most influence the quality of their teachers.

Theoretical framework

It is argued that a student's perception of their teacher significantly influences their self-concept regarding both the teacher and the subjects taught by that teacher (Geoff, 2004). This, in turn, has a substantial impact on their overall academic performance. The way students perceive their teachers can result in the development of either a positive or negative self-concept in relation to the subjects taught by those teachers, thereby influencing their academic achievements. Consequently, the roles assumed by teachers, whether nomothetic or ideographic, play a crucial role in shaping students' perceptions, and a student's standing among classmates is affected by the teacher's behavior towards them.

In summary, students, driven by their perceptions of teachers, may tend to withdraw, exhibiting a reserved attitude, and subsequently manifest this withdrawal by engaging in irregularities in the classroom. This research aims to explore the validity of this assertion, with the overarching objective of gaining insight into the recurring and dynamic relationship between students' perceptions of their teachers' behavior and their self-concepts.

Utilizing the exploratory factor analysis method, Zerihun et al. (2012) developed the Student Evaluation of Learning and Teaching questionnaire, comprising four factors: evaluation and feedback, course organization and lecture, self-evaluation of students, and the degree of student engagement.

The findings indicated that students could assess teaching in alignment with their individual learning progress through a questionnaire-based approach. The questionnaire items delineate expectations regarding teachers' actions in the teaching and learning process. Consequently, as the focus shifts towards learner-

centered instruction, employing an enhanced measure that enables students to evaluate teaching in relation to their learning could motivate teachers to adopt learner-centered approaches. The SELTQ incorporates items designed based on students' reflections on their experiences with learner-centered instruction, alongside a review of research on student learning. Furthermore, the effectiveness of teaching is assessed through dimensions reflecting both teacher support and students' evaluation of their learning. Students are anticipated to provide valuable insights that mirror their engagement level in the learning process. Therefore, the measure's appropriateness lies in its integration of indicators addressing both the effectiveness of teacher performance and students' self-assessment of their learning. Additionally, the utilization of the questionnaire is believed to challenge the prevailing notion of teaching and learning, shifting from transmitting information to facilitating learning. The dimensions in the refined questionnaire underscore that students are not mere observers but active participants in their own learning.

These dimensions (students' self-assessment and evaluation, level of engagement, quality of feedback and how the contents are organized and presented) together provide a comprehensive framework for evaluating the effectiveness of teaching and learning. By assessing these areas, the SELTQ aims to gather meaningful feedback that can be used to enhance the quality of education, improve instructional practices, and better align courses with students' needs and expectations.

Students' self-assessment and evaluation

Students' self-assessment is a process where learners reflect on and evaluate the quality of their own work and learning. Research shows that students who engage in self-assessment are better at identifying gaps in their knowledge and applying strategies to address them (Andrade & Valtcheva, 2009). Studies have demonstrated that self-assessment can lead to better academic performance. When students regularly assess their progress, they are more likely to make adjustments that lead to improvement (Brown & Harris, 2013).

This dimension evaluates the extent to which students feel they have achieved the learning outcomes of the course. It also captures overall student

satisfaction with the course, including their perceived value of the course content and the impact it has had on their knowledge and skills.

Students' level of engagement

The topic of student engagement in learning has been extensively studied, acknowledged for its substantial influence on the learning experience and outcomes (Kahu, 2013; Martin & Bolliger, 2018; Trowler & Trowler, 2010; Zepke & Leach, 2010). The extent of students' engagement is evident in their active participation in learning activities, interaction with both the lecturer and peers, attention level, and involvement or distraction during learning (Birch & Ladd, 1997; Skinner & Belmont, 1993).

Martin and Bolliger's (2018) investigation delved into students' evaluations of strategies fostering engagement in online courses. They discovered that students highly valued lecturers' efforts in effective communication, prompt feedback, and encouragement of student engagement. Conversely, other studies indicated that students transitioning to online learning tended to prefer a passive approach, learning through listening to lectures, and expressing dissatisfaction with attempts to incorporate active and collaborative learning strategies that promote engagement (Smith & Cardaciotto, 2012; Wong & WL Fong, 2014).

In this context, Deslauriers et al., (2019) found that although engaged students learned more, they reported learning less. They attribute this negative correlation to the heightened cognitive effort required during active learning, potentially diminishing the cognitive experience of active learning and fostering resistance to such learning processes.

This dimension measures the level of student engagement in the course, including the opportunities provided for active participation, interaction with peers and the instructor, and involvement in discussions. It also considers how the course encourages independent thinking and critical analysis.

Quality of feedback

In addition to furnishing essential information on instructional quality, seeking students' input regarding their experiences and perspectives offers

educators valuable feedback (Zerihun et al., 2012). Student involvement or participation encompasses active engagement in academic and complementary activities, as well as a commitment to learning and educational goals (Christenson et al., 2012). Feedback, defined as information provided by teachers, students, peers, oneself, or experiences regarding performance or understanding, plays a pivotal role in the learning process (Bijlsma et al., 2019).

Studies indicate that feedback can significantly enhance performance (Hattie & Timperley, 2007; Ilgen, Fisher, & Taylor, 1979; Kluger & DeNisi, 1996). A more efficient approach to providing teachers with feedback involves measuring student perceptions of the teaching they have encountered during their lessons (Muijs, 2006; Peterson, Wahlquist, & Bone, 2000). Using student perceptions increases the number of observations (in cases where students evaluate the teacher's teaching across multiple lessons) and involves more observers (the number of students) compared to lesson observations, potentially enhancing the reliability of the scores (Fauth, Decristan, Rieser, Klieme, & Büttner, 2014). Additionally, student perceptions represent the viewpoint of the target group (Kane & Staiger, 2012; Quaglia & Corso, 2017), fostering student voice (Cook-Sather, 2002, 2007): the active involvement of students in shaping their education (Lincoln, 1995). Teachers can utilize this feedback to enhance the quality of their teaching.

Research by Wyatt-smith et al., (2017) indicates that teachers' dispositions significantly impact students' perceptions of the teaching and learning environment, including specific subject areas. Lyons et al., (2012) international research project, Interest and Recruitment in Science (IRIS), underscores the crucial role of teacher feedback as the "most important influence" in fostering students' interest and knowledge in specific subject content (p. 19).

Furthermore, quality teaching in higher education spans various dimensions, including well-adapted learning environments, effective solicitation and utilization of feedback, thoughtful design of course content and curriculum, assessment of learning outcomes, student support services, and diverse learning contexts like collaborative learning (Hénard & Roseveare, 2012). Chalmers et al., (2014) highlight seven basic dimensions of quality in higher education, covering design and planning of learning activities, teaching and support of student learning, assessment and feedback provision, development of effective learning

environments, integration of scholarship with teaching, assessment of practice and continuing professional development, and personal and professional effectiveness.

Zerihun et al., (2012) further emphasize five basic dimensions related to quality in higher education, including the organization and presentation of courses by teachers, feedback given and received, the degree of student involvement in the learning process, students' judgments of their engagement, and the quality of evaluation and assessment practices.

Within the "students" category, the dimension of feedback emerges as one of the most critical elements of the learning process (Henderson et al., 2021). It encompasses evaluations from teachers (Zerihun et al., 2012; Zavlanos, 2017), self-evaluations by students (Biggs, (2011); Hénard & Roseveare, (2012); Zerihun et al., 2012; Zavlanos, 2017), and peer evaluations (Biggs, 2011), each providing unique perspectives. Additionally, teachers regularly offer formative feedback to students on their learning (Chalmers et al., 2014), emphasizing its frequent and constructive nature (MacGregor, 2007).

Beyond offering essential information pertaining to instructional quality, encouraging students to share their experiences and perspectives can furnish educators with valuable feedback (Zerihun et al., 2012).

This dimension considers how assessments (such as exams, quizzes, and assignments) are aligned with learning objectives and how feedback is provided. It evaluates the fairness, transparency, and timeliness of assessments, as well as the usefulness of the feedback in helping students improve.

Content is organized and presented

A well-crafted assessment practice not only establishes clear expectations but also defines a reasonable workload, providing students with opportunities for self-monitoring, practice, and feedback.

In the prevalent perspective of "teaching as transmitting knowledge," the evaluation of teaching effectiveness primarily focuses on the teacher's ability to deliver content to students. A student rating questionnaire aligned with this perspective aims to assess the teacher's performance in organizing, presenting, and evaluating content. Here, teaching evaluation is confined to issues of content

coverage and presentation, assuming that students learn when content is presented. In contrast, the perspective of "teaching as facilitating learning" places greater emphasis on student involvement in the learning process.

Teachers lacking in-depth knowledge of specific concepts, definitions, and content can only offer students superficial learning opportunities. The consequences of inadequately executing the curriculum suggest potential issues with scaffolding, new knowledge construction, and internalizing new information for students.

Effective teaching necessitates comprehensive content knowledge, extending beyond the lesson plan to encompass background knowledge. Teachers with a narrow perspective may view subjects in isolation, lacking the ability to connect the subject to the real world or other disciplines. Such teachers may rely on a textbook-centric approach, hindering their ability to inspire enthusiasm in students.

Successful teaching experiences are characterized by a correlation between mastery of content knowledge and learners' achievements, the effective use of teaching skills (Leinhardt & Greeno, 1986), control of pupils' behaviour, and a connection between feedback received and teachers' awareness and thinking processes in teaching situations (Graham, 2006; Zach et al., 2012).

This dimension evaluates how well the course is structured and organized, including the clarity of objectives, coherence of the course content, and the logical sequence of topics. It also looks at the effectiveness of the syllabus in communicating expectations and the availability of resources.

Present Study

Participants and Procedure

The convenience sample for this study comprised 475 students from the secondary level of the Portuguese educational system, all attending a private school. Within this group, 57.7% were female, and 40.6% were male. Data were gathered between 2020 and 2021 through a Microsoft Forms questionnaire administered in an online survey format. The school received the survey's URL, along with a letter explaining the study's nature and objectives, and instructions

on distributing the online survey to every student. Participants were fully informed about the study's purpose and completed the questionnaire anonymously. The SELTQ (Zerihun et al., 2012) was used with the permission of one of the scale's authors.

Translation of items and spoken reflection

The Portuguese iteration of the SELTQ underwent a comprehensive translation and back-translation process. Initially, a native Portuguese-speaking translator translated the SELTQ into Portuguese. Subsequently, the scale was re-translated from Portuguese to English. In the third step, both versions were meticulously reviewed item by item by the authors and professionals to identify any semantic or conceptual disparities between the original and translated renditions. Following this review, a small group of students assessed the Portuguese version of the SELTQ, and their feedback was deliberated upon to achieve a consensus for each item. Through these systematic procedures, a final version was established, and it was concluded that no further modifications were required. Table 13 presents the Portuguese version of the SELTQ.

Table 12 Portuguese and original versions of the (SELTQ)

SELTQ Portuguese version	SELTQ Original version
Items	
1. Os critérios de avaliação foram comunicados?	Assessment criteria communicated
2. O feedback foi fornecido de imediato?	Immediate feedback given
3. A avaliação foi coerente com os objetivos?	Assessment coherent with objectives
4. O feedback foi posteriormente analisado?	Discussions held following feedback
5. A avaliação foi construída para avaliar os conhecimentos?	Assessment evaluated understanding
6. A avaliação contribuiu para a tua aprendizagem?	Assessment was part of learning
7. As matérias foram revistas antes dos testes?	Revised assignments before exam
8. Foi fornecido feedback nos trabalhos de grupo?	Feedback on group assignments given
9. Foram fornecidos comentários sobre os trabalhos pedidos?	Comment given to draft works
10. Foram fornecidos exemplos de trabalhos bem executados?	Examples of good work provided
11. As tuas intervenções na aula foram encorajadas e valorizadas?	Contributions encouraged and valued
12. Os conteúdos incluíram tarefas e objetivos?	Contents have tasks and objectives
13. Foram utilizados métodos de ensino adequados?	Appropriate teaching methods used
14. Os objetivos e as expetativas foram explicados?	Objectives and expectations explained
15. Foram facilitadas oportunidades para diálogo?	Opportunities given for dialogue
16. A minha aprendizagem foi melhorada pela minha participação?	Learned better due to my involvement
17. Solicitei ajuda ao professor?	Asked instructor for support
18. Fui informado do desempenho exigido?	Required performance informed

19. O feedback do professor foi útil?	Implemented instructor's comments
20. Foram solicitadas justificações para as tuas respostas?	Asked to provide justifications
21. Houve autoavaliação durante o processo?	Assessed own progress
22. Foram fornecidas explicações alternativas?	Provided alternative explanations
23. Participei nas avaliações dos meus pares?	Involved in peer evaluation
24. Participei em projetos de grupo?	Involved in group projects

Method

Psychometric properties

For the present study, it was built a database (without missing values) by randomly selecting from the original database about 50% of each scholar year, 10th. $n = 69$ (28.9%), 11th. $n = 98$ (41.0%) and 12th. $n = 72$ (30.0%) ($N = 475$, $n = 239$). For the validation and study of the psychometric features of the SELTQ a mixed method was used: Exploratory Factor Analysis (EFA, to reach the optimal components number, and the adequacy of the items), and the Confirmatory Factor Analysis (CFA, for testing the best model by means of adequate testing, between concurrent models). The 24 items distributions' normality was tested for choosing the CFAs method using Kolmogorov-Smirnov(K) and Shapiro-Wilk's tests (W). For EFA studies, Principal Components Extraction (PC) method was used (firstly without any rotation) and choosing the number of components to be tested by looking at the eigenvalues (> 1.00 , Kaiser's rule) and the Scree plot (Hair et al., 2019; Leech et al., 2005). In subsequent analyses the varimax with Kaiser Normalization rotation was chosen, because of the original model analyses, performed with this method (Zerihun et al., 2012). The adequacy of the EFA procedure was studied by computing the Kaiser-Meyer-Olkin sample adequacy measure (KMO) and Bartlett's sphericity test (Bartlett's $\chi^2_{(df)}$ and its p value). Communalities were examined [the majority must be higher than .50, or alternatively 3 or more items must load higher than .40 (substantial weight) in the same component (Fabrigar & Wegener, 2011; Pituch & Stevens, 2015). For retaining a cross-load in the solution, the difference between loadings must be .10 or higher (Hair et al., 2019). For a solution to be considered adequate, all components must have more than two indicators (MacCallum et al., 1999; Marsh et al., 1998; Schreiber, 2021). Correlation between factors was computed following the acceptable EFA model structure by means of Pearson Product-

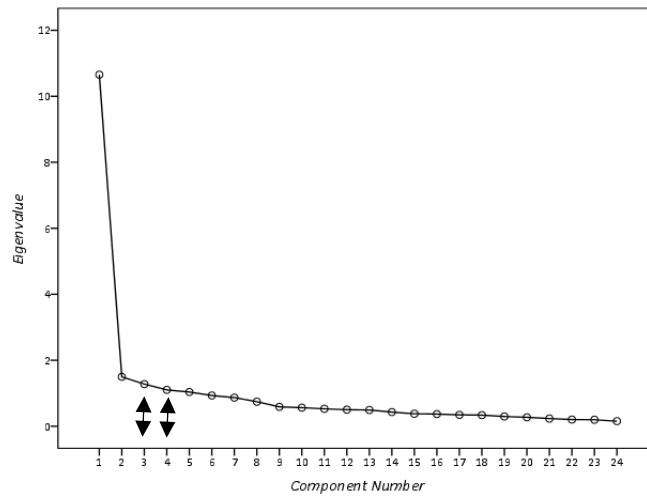
Moment Correlation (r). At this point, internal consistency studies were also performed, using the alpha of Cronbach's (α). The former analyses were achieved by referring to SPSS 20 version software package. The next step was to compare the original model and its concurrent by means of Structural Equation Modelling (SEM), using the Maximum Likelihood Robust Method (MLR). This first comparison constrained both models to their originality, assessing them by means of the Akaike's Information Criteria (AIC) (Bozdogan, 1987; Werner & Schermelleh-Engel, 2010). The more adjusted model was then tested by means of the Wald test and the LaGrange Multiplier (LM). The LM allows the testing and comparison of the increment of the model fit (Chi-square value analysis) after the insertion of proper parameters in the model (Ullman, 2006), finding the structural and measurement model that best fits the data. The constrained model was compared with the less constrained one by means of a Satorra-Bentler Chi-square difference test (Bryant & Satorra, 2012; Pavlov et al., 2020). The CFAs procedures were computed using EQS 6.1 statistical program (exception made to the Chi-square difference test ($\Delta SB\chi^2$), performed referring to SBDiff.exe program (Crawford & Henry, 2003). Both final models were also compared using additional goodness of fit indices, as indicated in literature (Hair et al., 2019, pp. 367), namely, the Satorra-Bentler Scaled Chi-square with degrees of freedom (df) and significance value (p), the Bentler-Bonett Non-Normed Fit Index (NNFI), the Comparative Fit Index, the Bollen Fit Index (IFI), the Root Mean-Square Error of Approximation (RMSEA), and its 90% Confidence Interval (I.C.90%_{RMSEA}).

Results

Preliminary analyses

Normality tests indicated that all 24 SELTQ items were not distributed accordingly to the normal curve (all K and W $ps = .00$). The first EFA computed without constraining the number of components resulted in a $KMO = .92$, and a Bartlett's $\chi^2_{(276)} = 3333.47$, $p = .00$. There were 5 Eigenvalues above 1.00, although the last was of 1.04. The adequacy of the EFAs analyses was attained. The Scree plot suggested its inflexion between 3 and 4 components. Figure 5 shows the Scree plot.

Figure 3 Scree plot of the SELTQ, using Principal Components Method, Without Rotation



The decision was to test for 4, 3 and 2-factor solutions.

Exploratory Factor Analysis (EFA), Internal Consistency, and Descriptive statistics

The 3 and 4-factor models were tested, using the varimax rotation with Kaiser's normalization. The results of the rotated matrices showed inconsistency for both models. For the 4-factor model, there were two factors with only two indicators. The 3-factor solution indicated the third factor as having only two indicators.

For the 2-factor EFA's model, 11 communalities were below .50, but in both factors, there were more than 3 items with loadings above .40. The rotated matrix presented a solution with 13 cross-loadings, but only item nr. 16 had a loading interval of less than .10 (.89). Item 16 was withdrawal and the respecified model was tested. The tested model presented 11 communalities below the .50 value (between .23 and .67), but all loadings, in both factors, were above .40 (between .41 and .80). There were 8 cross-loadings, but non with criteria for withdrawal. The solution accounted for about 51% of the total variance ($s^2 = 51.06\%$), with the first factor explaining most of the variance accounted for ($S1^2 = 34.88\%$ and $S2^2 = 16.19\%$). Factor 1 had the higher number of items (16), and factor 2 had the lowest (7). The items mean was between 3.77 and 4.68, with items nrs. 10 and 17 to present the highest values for Standard-Deviation. The correlation between factors was strong and positive. The Cronbach alphas suggest acceptable to high (although not at multicollinearity levels) internal consistency

for factor 2 and factor 1, respectively. Table 14 presents the results of the EFA's final solution and the scale descriptive statistics.

Table 13 SELTQ Portuguese version –Factors, Loadings, Correlation and Internal Consistency

Items	Factors λ		Desc. Stats.	
	1	2	M	SD
1. Assessment criteria communicated	.68		4.54	.79
2. Immediate feedback given	.76		4.35	.88
3. Assessment coherent with objectives	.80		4.59	.67
4. Discussions held following feedback	.76		4.40	.87
5. Assessment evaluated understanding	.70		4.60	.73
6. Assessment was part of learning	.60	.30	4.47	.90
7. Revised assignments before exam	.59		4.68	.62
8. Feedback on group assignments given	.64		4.46	.87
9. Comment given to draft works	.57	.41	4.37	.86
10. Examples of good work provided	.44	.55	3.89	1.28
11. Contributions encouraged and valued	.65		4.46	.89
12. Contents have tasks and objectives	.69		4.64	.64
13. Appropriate teaching methods used	.63	.33	4.62	.64
14. Objectives and expectations explained	.79		4.52	.73
15. Opportunities given for dialogue	.64		4.55	.78
17. Asked instructor for support		.65	3.95	1.03
18. Required performance informed	.67	.40	4.46	.83
19. Implemented instructor's comments	.67	.40	4.60	.71
20. Asked to provide justification	.41	.56	4.41	.83
21. Assessed own progress		.41	4.62	.64
22. Provided alternative explanations	.40	.62	4.41	.81
23. Involved in peer evaluation		.78	3.77	1.49
24. Involved in group projects		.56	4.56	.92
Indicators per Factor	16	7		
Correlation between Factors (r)	.65			
Internal Consistency (α)	.94	.76		

Note. In shaded are the Items loadings corresponding to each. λ = Item loadings. Desc. Stats. = Descriptive statistics M = Mean. SD = Standard Deviation. α = Cronbach's alpha r = Pearson's Product Moment Coefficient. ** $r'p < .01$ (significance). Principal Components Extraction Method, with varimax rotation with Kaiser's *Normalization*. Rotation converged in 3 iterations.

Confirmatory Factor Analyses

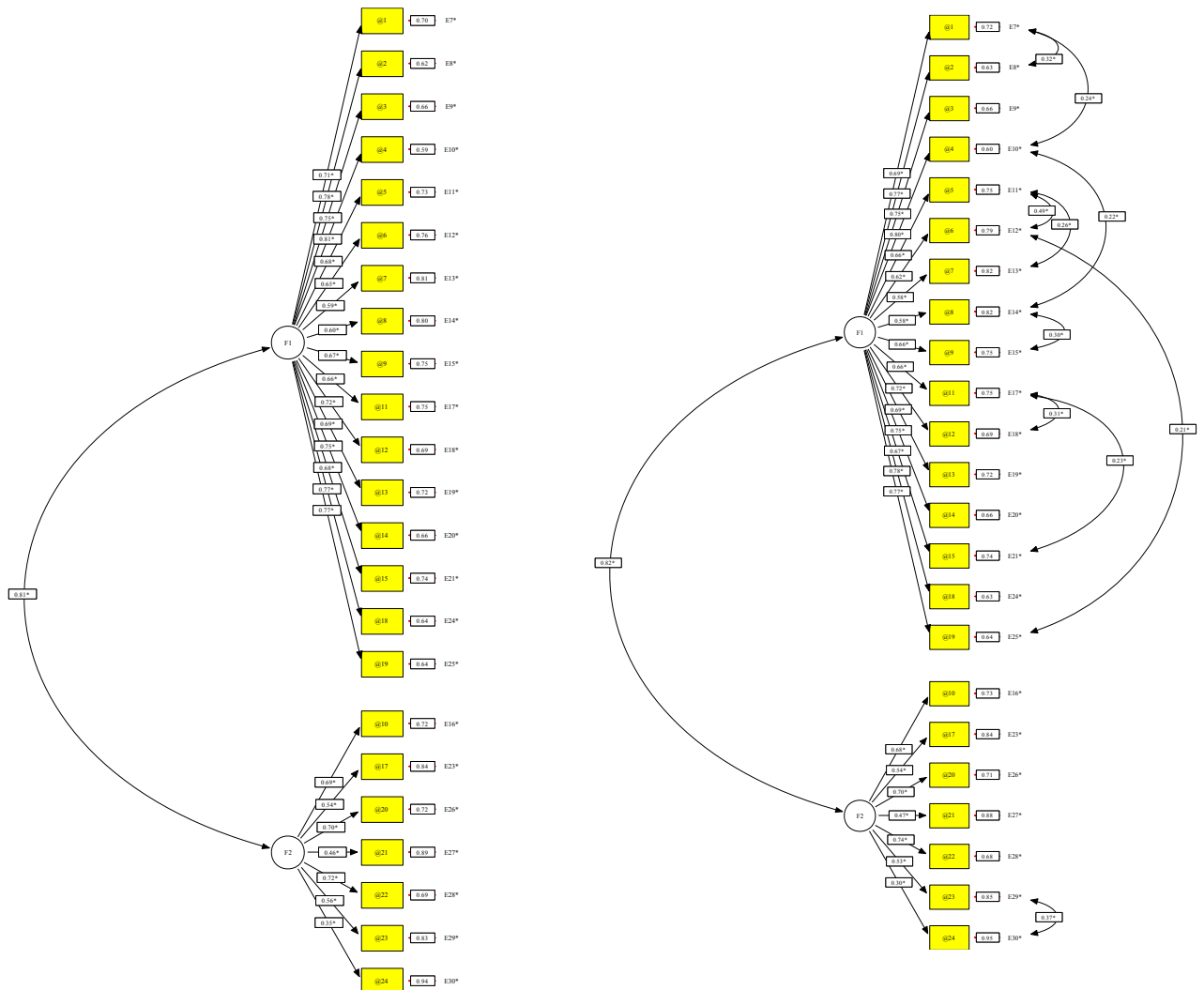
Confirmatory Factor Analyses for Comparison between the original model and the competing EFA's Model (Non-nested models)

Firstly, the authors' original model was tested against the EFA final mode, without allowing for adding or withdrawing parameters, as already pointed out. As the models were non-nested, and there was no normal data distribution, MLR was the method used. The comparison between the AIC's values was as follows: Original Model AIC = 302.81, Model EFA_{2factors} = 281.07. The model that fits better the data is the resulting from the CFAs' analyses. Both models presented poor additional goodness of fit indices, consult Table 15 (below).

Confirmatory Factor Analyses for Comparison between Competing Nested Models

To deepen the structural and measure features of the Portuguese version of the SELTQ, values for the LM and for the Wald test were computed for the two factors EFA's model. Wald test didn't indicate the withdrawal of any of the parameters, but the LaGrange Multiplier suggested 9 correlations between errors in the first factor and another one at the second factor. The Satorra-Bentler Chi-square difference test results favors a better fit of the less constrained model ($\Delta SB\chi^2 = 77.46$, $df = 10$, $p = .00$). In both models, the regression values are higher in factor 1, but generally they are well balanced in both factors, except made to item nr. 24. Figure 6 presents the nested models' structural and measurement solutions.

Figure 4 Nested Models Final Comparison. On the left most constrained model, on the right least constrained model. Loadings, correlations, errors and correlations between errors are standardized values



The comparison between models (non-nested – original and the resulting from exploratory factor analyses, and nested, the latter competing with the non-constrained to withdrawal or adding parameters), show de most adjusted and the less adjusted models tested, by studying the goodness of fit indices. Results suggest an adequate fit to the data from the two factors non-constrained model, while the other two models don't present acceptable values for the present data. Table 15 summarizes the results.

Table 14 Competing Non-nested and Nested Models Goodness of Fit Indexes

Fit Indexes for Maximum-Likelihood Estimation Robust	SELTQ Original Model	EFA Model	Less Constrained Model
SB χ^2	489.22	447.69	317.95
df	246	229	219
p	.00	.00	.00
Bentler-Bonett's Non-normed Fit Index (NNFI)	.81	.82	.92
Comparative Fit Index (CFI)	.83	.84	.93
Bollen's Fit Index (IFI)	.83	.84	.93
Root Mean Square Error of Approximation (RMSEA)	.06	.06	.04
Confidence Interval at 90% of RMSEA (IC90% _{RMSEA})	[.06, .07]	[.05, .07]	[.03, .05]
Comparison Measures			
Satorra-Bentler Chi-square Difference test (Δ SB χ^2 (df), p)	77.46 ₍₁₀₎ , p = .00		
Akaike Information Criteria (AIC)	302.81	281.07	

Note: The method used was Maximum-Likelihood Estimation Robust. SB χ^2 = Satorra-Bentler's Scaled Chi-Squared; df = degrees of freedom; p = significance probability value.

Discussion

In this research, the Student Evaluation of Learning and Teaching Questionnaire (SELTQ) underwent adaptation to Portuguese for the objective of understanding the students' perspectives about the factors that most influence the quality of their teachers. Psychometric analyses revealed inconsistencies in the results of the rotated matrices concerning the original proposed model. The 4-factor model showed two factors with only two indicators each, and the 3-factor solution indicated that the third factor had only two indicators.

The emergent theoretical model took the form of a 2-factor model. The original factor 1 merged with factors 2 and 3, while the original factor 4 remained but incorporated item 10 from the original factor 1 and item 17 from the original factor 3, creating a second factor. Consequently, factor 3 ceased to exist, dispersing between factor 1 with 2 items and factor 2 with 1 item.

In our revised model, factor 1 encompasses self-assessment and teacher feedback, while factor 2 pertains to the organization and presentation of course content. In relation to the original structure, the new factor "self-assessment and teacher feedback" encompasses the original factors of students' self-assessment, students' level of engagement, and the quality of feedback, as it was not possible to distinguish between these three factors based on our sample. The

other new factor that emerged, "organization and presentation of course content," is like the original "the way the course content is organized and presented," with the addition of two new items. Upon closer examination, item 10 aligns seamlessly with factor 1, while item 17 is associated with item 22. This solution accounted for approximately 51% of the total variance.

The overall mean score for all students across various measurements was 4.43 (SD = 0.84), indicating a very high score. However, item 23, "Involved in peer evaluation," received the lowest rating (M: 3.77; SD: 1.39), with the widest standard deviation, suggesting variability in teacher practices as a potential explanation for the dispersed responses. Similarly, items 10, "Examples of good work provided" (M: 3.89; SD: 1.28), and 17, "Asked instructor for support" (M: 3.95; SD: 1.03), exhibited the widest standard deviations in the sample, potentially influenced by teaching practices, given the questions' emphasis on teacher attitudes in the classroom. Item 10, however, saturates in both factors, providing part of the explanation, while item 17 only exhibits dispersion as an explanation. In both cases, teaching practices may play a role.

The highest-rated items reflect teachers' attention to the evaluation process for the sampled students. Item 7, "Revised assignments before the exam," received the highest rating (M: 4.68; SD: 0.62), followed by item 13, "Appropriate teaching methods used" (M: 4.62; SD: 0.64), and item 5, "Assessment evaluated understanding" (M: 4.60; SD: 0.73). Students also considered teacher feedback, with item 19, "Implemented instructor's comments" (M: 4.60; SD: 0.71), being one of the best-rated items.

Within factor 2, item 21, "Assessed own progress" (M: 4.62; SD: 0.64), was one of the highest-rated items, contrasting with item 23, "Involved in peer evaluation," which received the lowest rating (M: 3.77; SD: 1.39) and the widest standard deviation. This suggests that teachers recognize the importance of student self-assessment but may not render the necessary importance to peer assessment in the teaching-learning process.

Based on the results obtained, the students feel that the teachers revised assignments before the exam, that the content includes tasks and objectives, and that appropriate teaching methods were used. The students also mentioned that the instructors' comments were implemented and that the assessment effectively evaluated their understanding. Finally, it was clear to the students that they also

assessed their own progress. All these responses seem to indicate that the teachers promoted students' self-assessment, increased students' level of engagement, and that the quality of feedback students gave and received was appropriate for the assessment. Additionally, the way the course content is organized and presented received a positive evaluation from the students. Despite a generally positive evaluation, it is important to note that students still showed difficulties in asking the instructor for support. Examples of good work were not always provided, and there was limited involvement in peer evaluation. These areas received the lowest scores in the students' assessment.

Conclusion

To enhance the quality of the educational system, it is essential to employ a comprehensive tool that captures students' perspectives, enabling the identification of areas where teachers can refine their practices. The adapted SELTQ form, tailored for Portuguese students, offers a valuable means of comparing results within the Portuguese educational context and with international studies.

In the Portuguese version of the SELTQ, only two dimensions were identified, as opposed to the four originally proposed by the authors. Several factors could explain this difference. Cultural differences may shape expectations and educational practices, causing variations in how students perceive and evaluate teaching across different cultures. In Portugal, certain elements of the original dimensions might have been interpreted or valued differently, leading to a consolidation of dimensions. Differences in the educational system may also play a role, as the Portuguese system may prioritize different aspects compared to the system where the questionnaire was initially developed, thereby influencing students' responses and contributing to a restructuring of dimensions. Additionally, during the translation and adaptation process, some nuances of the original dimensions may have been lost or altered, resulting in a merging of dimensions or a shift in focus. Lastly, students may have simplified their responses, perceiving less distinction between the original dimensions, leading to fewer dimensions being identified in the analysis. These factors underscore

the importance of considering the local context when adapting educational assessment tools.

In conclusion, while the overall feedback from students was positive—emphasizing effective teaching methods, well-organized course content, and assessments that supported self-assessment and engagement—there are areas that require improvement. Students experienced difficulties in seeking support from instructors, inconsistencies in receiving examples of good work, and limited involvement in peer evaluation. Addressing these areas could further enhance the learning experience by creating a more supportive and interactive educational environment.

Limitations and future directions

Given the limitations mentioned, including the small sample size and variability, the results would likely support the reinforcement of the 2-factor model rather than the original 4-factor model. The differences observed between the Portuguese-SELTQ and the original model suggest that the 2-factor model may better reflect the specific context and characteristics of the sample studied. However, the recommendation for future studies to test alternative factor models with larger samples implies that the 4-factor model should not be completely ruled out but rather re-evaluated under different conditions to determine if it might be applicable with more robust data.

In summary, this study is pivotal not only for its contribution to a deeper and more comprehensive understanding of teacher practices but also for its validation of an essential tool in the assessment and enhancement of educator evaluation. The significance of this research extends beyond academic inquiry; it provides a strategic framework for refining teaching methodologies and fostering a culture of continuous improvement in education. This is particularly noteworthy as it addresses a critical gap in the Portuguese educational context, where the need for systematic, reliable, and culturally relevant evaluation methods has been acutely felt. By offering a validated tool that aligns with the specific needs of Portuguese students and educators, the study sets a new standard for Student Evaluation of Learning and Teaching in Portugal, paving the way for more

informed decision-making and policy development that can elevate the overall quality of education.

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**Capítulo 4. Teaching effectiveness
through the lens of students and teachers: a
comparative study.**

Teaching effectiveness through the lens of students and teachers: a comparative study.⁴

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Abstract

Teaching effectiveness is intrinsically linked to teachers' professional knowledge and the quality teaching-learning activities implemented in the classroom. Understanding teachers and students' perceptions regarding teaching effectiveness offers valuable insights into educational quality. This study investigates the (mis)match between teacher self-efficacy and student perceptions of teaching effectiveness in the Portuguese secondary education system. Data were collected from a convenience sample comprising 36 secondary school teachers (86.1% women; 13.9% men) and 475 students (57.7% female; 40.6% male) in private schools during 2020–2021. Teachers' self-efficacy was measured using the TSES short form, while students' perceptions were assessed through the SELTQ. The findings reveal a strong alignment between teacher self-efficacy and student evaluations in instructional strategies and student engagement. Teachers and students consistently rated "explaining concepts in multiple ways" and "opportunities for dialogue" highly, reflecting effective instructional practices. However, both groups identified challenges in motivating disengaged students and providing clear examples of good work. Teachers also reported lower efficacy in enforcing classroom rules, while students expressed high satisfaction with assessment coherence and feedback. These

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results highlight the need for professional development programs to address specific areas for improvement, particularly in classroom management and engagement strategies. The study underscores the importance of using validated, context-sensitive assessment tools to guide teaching practices, with implications for fostering more supportive and effective learning environments in the Portuguese educational system.

Keywords: Teacher effectiveness; Teachers' perceptions; students' perceptions; teaching-learning activities; learning environments; secondary school

Introduction

Understanding teachers' and students' perceptions of teacher effectiveness is crucial for gaining comprehensive insights into educational quality. Teachers' perspectives often reflect the effectiveness of their strategies and alignment with curricular goals, while students' views provide a direct measure of how engaging and impactful those strategies are in practice. By comparing these perspectives, educators can identify gaps between intended and experienced teaching practices, which is essential for refining methodologies and addressing diverse learning needs. Such understanding supports the development of professional learning programs that are both context-sensitive and evidence-based, ensuring that teaching strategies are responsive to both educator expertise and student expectations. This dual perspective is vital for fostering inclusive and effective educational practices, ultimately improving student outcomes and teacher satisfaction (Hammond et al., 2017).

Given the importance of teaching-learning activities for students' success, the current paper aims to compare teachers' and students' perceptions of the teaching-learning activities enacted in classrooms. A compelling rationale for this study is that teachers' and students' perceptions of teaching-learning activities used in classrooms can influence the effectiveness of teaching and learning and that the findings on teachers' and students' perceptions of teaching-learning activities may be used to highlight implications for teaching/learning and needed

interventions to improve education. The theoretical framework is divided into the definition of Teacher Effectiveness, Student Perspectives on Teacher Effectiveness, Teacher Perspectives on Teacher Effectiveness, and (mis)match between students' and teachers' perceptions.

Theoretical framework

Teacher effectiveness refers to a teacher's ability to foster significant student learning and development effectively and sustainably. This definition includes not only academic achievement but also social, emotional, and behavioral behavioral-behavioral aspects of student growth. The consensus in the literature (Coenen et al., 2018; Hattie, 2009) suggests that teachers play a crucial role in students' achievements. Empirical studies consistently highlight several dimensions related to teachers that appear in numerous research works. Based on the literature, the most used variables to measure teacher effectiveness are teacher personal dimensions, instructional practices, and student variables. Indeed, studies reveal that the dimensions most correlated with students' achievements fall within these categories. The literature identifies several indicators of teacher effectiveness, such as strong content knowledge, promoting student understanding and engagement, and managing classroom environments effectively (Holmes & Schumacker, 2020). All these dimensions are observed to have the potential to influence student outcomes.

Teacher effectiveness is a multifaceted concept that extends beyond mere academic performance. It encompasses pedagogical practices, continuous reflection, and a holistic approach to student development. These definitions and contributions from key authors highlight the importance of a comprehensive understanding of teacher effectiveness, blending academic and socio-emotional growth within a supportive and well-managed learning environment.

Based on extensive research on teacher effectiveness and the diverse theoretical and empirical perspectives presented, teacher effectiveness can be defined as the ability to create a learning environment that fosters students' cognitive, emotional, and social development. This is achieved through pedagogical practices tailored to students' needs, with clear and structured content delivery, effective classroom management, and diverse instructional

strategies. Such effectiveness is reflected in students' academic success and motivation, stemming from a combination of teacher self-efficacy, specialized subject knowledge, quality interactions, and a continuous commitment to improving educational practices.

Student Perspectives on Teacher Effectiveness

Students' perspectives on teacher effectiveness provide valuable insights into the qualities and practices that they believe contribute to effective teaching. These perspectives often highlight aspects of teaching that directly impact their learning experience and overall development.

The key perspectives that emerge from the literature are: Engagement and Motivation, students often emphasize the importance of teachers who can make learning interesting and engaging. Effective teachers inspire and motivate their students to learn and participate actively in class. According to Skinner & Belmont (1993), students' motivation is significantly influenced by teachers who provide stimulating and engaging learning environments. Clear Communication, clear and understandable communication is crucial. Students value teachers who can explain concepts in a way that is easy to grasp and who are open to questions and discussions. Hattie (2009) underscores the importance of clarity in instruction as a significant factor in student achievement. Support and Encouragement, a supportive teacher who shows empathy and provides encouragement can significantly impact a student's confidence and willingness to take on challenges. Students appreciate teachers who are approachable and offer help when needed. According to Wentzel (1997), perceived teacher support is closely linked to students' academic motivation and performance. Classroom Management, effective classroom management creates a conducive learning environment. Students prefer teachers who can maintain order and respect in the classroom, allowing them to focus on their studies without disruptions. Marzano, (2013) highlights that effective classroom management is critical to creating an environment conducive to learning. Feedback and Assessment, constructive feedback is essential for student growth. Students value teachers who provide timely and specific feedback on their work, helping them understand their strengths and areas for improvement. Shute (2008) discusses the impact of

formative feedback on learning and highlights its role in enhancing student performance. Knowledge and Expertise, students respect teachers who have a strong command of their subject matter. They feel more confident and trust in their learning when they perceive their teacher as knowledgeable and competent. Darling-Hammond (2000) asserts that teachers' subject matter knowledge significantly impacts student learning and achievement.

Understanding students' perspectives on teacher effectiveness can help educators reflect on and improve their teaching practices, ultimately leading to better student outcomes and a more positive educational experience.

Teacher Perspectives on Teacher Effectiveness

Teachers' perspectives on teacher effectiveness provide crucial insights into the qualities and practices that educators believe contribute to successful teaching and learning. These perspectives often emphasize the importance of professional skills, continuous development, and the ability to adapt to students' needs.

The key perspectives that emerge from the literature are: Professional Knowledge and Expertise: Teachers believe that having a deep understanding of the subject matter and effective teaching methodologies is fundamental to teacher effectiveness. Shulman (1987) highlights the importance of pedagogical content knowledge, which integrates subject expertise with teaching skills. Reflective Practice: Effective teachers consistently engage in reflective practices to evaluate and improve their teaching. Reflective practice involves critically analyzing one's actions and experiences to enhance professional learning and development (Mann et al., 2009). Student-Centered Approaches: Teachers emphasize the importance of adopting student-centered teaching methods that cater to diverse learning needs. Tomlinson (2001) discusses differentiated instruction as a key strategy for addressing the varying abilities and interests of students. Classroom Management Skills: Effective classroom management is seen as essential for creating a productive learning environment. Teachers believe that maintaining order and establishing a positive classroom climate are crucial for facilitating learning. Marzano et al. (2003) stress that effective classroom management practices significantly impact student engagement and

achievement. Collaboration and Professional Development: Teacher's value ongoing professional development and collaborative opportunities to enhance their teaching practices. Hargreaves & Fullan (2012) argue that professional learning communities and collaborative networks support teacher growth and effectiveness. Feedback and Assessment: Teachers view the ability to provide meaningful feedback and conduct fair assessments as integral to their effectiveness.) Formative assessment practices help teachers understand student progress and tailor their instruction accordingly (Black & Wiliam, 1998; Hattie & Timperley, 2007).

Gaining insight into teachers' views on effectiveness is key to identifying crucial practices and opportunities for professional development, leading to better educational outcomes.

(Mis)Match between students' and teachers perceptions

This study builds on the existing literature comparing teachers' and students' perceptions of teacher effectiveness. Researchers have utilized these perceptions to gain insights into the quality of teaching and learning. Petrus (2018) suggests that understanding the challenges students face in the learning process requires examining the similarities and differences between teachers' and students' views on the teaching-learning process. Fitzgerald et al. (2020) further emphasize the importance of evaluating classroom practices from both perspectives, as such evaluations can reveal students' learning challenges and offer opportunities to address them. Moreover, teachers' and students' perspectives can be used to explore areas like pedagogical content knowledge and identify necessary professional development for teachers.

Numerous studies have shown that teachers and students often perceive the teaching-learning process differently. For instance, Petrus (2018) conducted a study in South Africa comparing the perceptions of teachers and grade 11 students regarding factors contributing to poor performance in physical science. The findings highlighted significant differences in how teachers and students perceived the causes of poor academic outcomes. Overall, the literature suggests a general trend of differing perceptions between teachers and students

regarding the teaching-learning process. As Brok et al. (2005) point out, these differences may be influenced by factors such as ethnicity.

Research into educational effectiveness has highlighted that classroom processes significantly contribute to variations in students' learning outcomes (Kyriakides & Creemers, 2008). Contemporary perspectives on teaching and learning encompass both cognitive and motivational aspects, considering domain-specific and domain-independent facets of learning and instruction (Seidel & Shavelson, 2007).

Supportive climate encompasses specific elements of the teacher-student relationship, including positive and constructive teacher feedback, a supportive approach to student errors and misconceptions, and caring teacher behaviour (Klieme et al., 2009). Empirical evidence confirms the positive impact of strong student-teacher relationships on student motivation and learning (Goodenow, 1993; Pianta et al., 1997), and this concept has been conceptualized by various theoretical approaches (Davis, 2003). In our study, we adopted the dimensions for the teachers' perceptions, student engagement (ESE), instructional strategies (EIS), and classroom management (ECM), based on the TSES questionnaire (Tschannen-Moran & Hoy, 2001) and for the students' perceptions the dimensions encompass self-assessment and teacher feedback and the organization and presentation of course content based on the SELTQ questionnaire (Zerihun et al., 2012).

The selected questionnaires were chosen considering that there is an alignment in student engagement but with complementary focuses. Both the TSES and SELTQ highlight the importance of student engagement, but they approach it from different angles. TSES emphasizes teachers' self-efficacy in emotionally and cognitively engaging students, as well as handling challenging behaviours (e.g., "calming disruptive students" and "motivating students with low interest"). SELTQ, on the other hand, reflects students' perceptions of engagement, particularly through opportunities for dialogue, feedback, and the encouragement of participation.

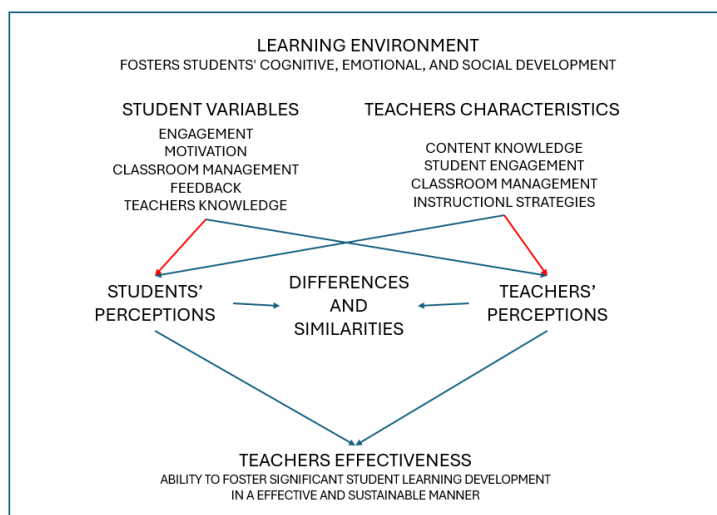
This suggests that while teachers feel generally confident in fostering engagement, there are challenges—such as addressing low-interest students and managing disruptions—that might not be directly addressed through the practices students perceive.

There is also a complementary perspective in evaluating instructional strategies. The TSES dimension focuses on teachers' perceptions of their abilities to employ specific pedagogical approaches, such as creating questions or providing alternative explanations. In contrast, the SELTQ dimension reflects students' evaluations of the clarity, structure, and effectiveness of these strategies in practice.

Similarly, the classroom management dimension of TSES highlights teachers' perceptions of their ability to create a conducive learning environment by maintaining order and managing behaviours, which aligns with the SELTQ's focus on students' perceptions of structure and organization in the classroom.

The complementary nature of these dimensions underscores how teachers' self-efficacy and students' perceptions work together to provide a comprehensive view of classroom dynamics. While TSES highlights teachers' strengths and areas for improvement, SELTQ affirms the impact of these efforts on students' learning experiences. Addressing specific challenges, such as conflict management and adapting strategies to diverse student needs, could further enhance both teacher confidence and student satisfaction (Figure 7).

Figure 5 Conceptual framework



This study sought to compare secondary school teachers' and students' perceptions of secondary school teaching-learning activities. The study was guided by the following research question: What differences occur between teachers' and students' perceptions of teaching-learning activities?

Present study

Participants and Procedure

The convenience sample for this study (table 16) consisted of 36 teachers from secondary teaching schools of the Portuguese educational system teaching at a private school. That total includes 86.1% women and 13.9% men. Concerning service time, 72.2% had between 11 to 20 years of teaching time, 16.6% had over 20 years, 8,3% had between 6 and 10 years and 2.8% had less than 5 years. Data were collected (an online survey was conducted) in 2020 and 2021 using a Microsoft Forms questionnaire. The school was mailed the URL for the survey, with a request to send it to Portuguese, Biology, Mathematics, and Physics teachers in the school, accompanied by a letter explaining the nature and general aim of the study and directions on how to do the online survey. Participants were aware of the purpose of the study and completed the questionnaire anonymously. Teacher self-efficacy was measured using the TSES short form (Tschannen-Moran & Hoy, 2001).

For the student sample (table 17), the convenience sample comprised 475 students from the secondary level of the Portuguese educational system, all attending a private school. Within this group, 57.7% were female, and 40.6% were male. Data were collected between 2020 and 2021 through a Microsoft Forms questionnaire administered in an online survey format. The school received the survey's URL, along with a letter explaining the study's nature and objectives, and instructions for distributing the online survey to every student. Participants were fully informed about the study's purpose and completed the questionnaire anonymously. Teacher self-efficacy was assessed using the SELTQ (Zerihun et al., 2012).

Table 15 Demographic Characteristics of Teachers

Characteristic	Frequency	Percentage (%)
Gender		
Female	31	86.1
Male	5	13.9
Service Time (years)		
11–20	26	72.2
>20	6	16.6

6–10	3	8.3
<5	1	2.8

Table 16 Demographic Characteristics of Students

Characteristic	Frequency	Percentage (%)
Gender		
Female	274	57.7
Male	193	40.6

Results

Teachers

When considering the dimensions of teacher self-efficacy (table 18) we found that the sampled teachers in our study mostly believe in their capabilities across the analyzed dimensions. The overall average values obtained in the subscales are approximately those obtained in previous validation studies (Salas-Rodríguez et al., 2021; Tschannen-Moran & Hoy, 2001).

Teachers demonstrate strong confidence in their instructional abilities, particularly in providing alternative explanations or examples when students are confused and in crafting effective questions to engage students. They also exhibit confidence in their capacity to motivate students to value learning. Regarding classroom management, teachers feel assured in their ability to get students to follow classroom rules, reflecting their overall competence in maintaining a productive learning environment.

Table 17 Descriptive statistics TSES

	N	M	SD	MIN	MAX
TSES	36	4.43	.29	4	5
Efficacy for student engagement	36	4.44	.34	4	5
2. How much can you do to motivate students who show low interest in schoolwork?	36	4.22	.49	3	5
4. How much can you do to help your students value learning?	36	4.53	.56	3	5
7. How much can you do to calm a student who is disruptive or noisy?	36	4.19	.53	3	5
11. How much can you assist families in helping their children do well in school?	36	4.39	.55	3	5
Efficacy for instructional strategies	36	4.42	.44	3	5

5. To what extent can you craft good questions for your students?	36	4.67	.48	4	5
9. To what extent can you craft good questions for your students?	36	4.19	.53	3	5
10. To what extent can you provide an alternative explanation or example when students are confused?	36	4.81	.40	4	5
12. How well can you implement alternative strategies in your classroom?	36	4.31	.62	3	5
8. How well can you establish a classroom management system with each group of students?	36	4.22	.59	3	5
Efficacy for classroom management	36	4.43	.39	3	5
1. How much can you do to control disruptive behavior in the classroom?	36	4.31	.58	3	5
3. How much can you do to get students to believe they can do well in schoolwork?	36	4.50	.51	4	5
6. How much can you do to get children to follow classroom rules?	36	4.78	.42	4	5

Regarding the analysis, for each dimension, starting with Student Engagement, which shows an overall mean of $M=4.44$ and a standard deviation of $SD=.29$, indicating consistent perceptions among teachers. The strongest items include "helping students value learning" ($M=4.53$, $SD=.56$) and "assisting families in helping students learn better" ($M=4.39$, $SD=.55$). On the other hand, the weaker items are "motivating students with low interest" ($M=4.22$, $SD=.49$) and "calming disruptive students" ($M=4.19$, $SD=.53$). In the Instructional Strategies dimension, the overall mean is $M=4.42$, with a standard deviation of $SD=.44$. Strong items include "creating good questions for students" ($M=4.67$, $SD=.48$) and "providing alternative explanations when students are confused" ($M=4.81$, $SD=.40$), while weaker items are "implementing alternative strategies in the classroom" ($M=4.31$, $SD=.62$) and "establishing a group management system" ($M=4.22$, $SD=.59$).

In the Classroom Management dimension, an overall mean of $M=4.43$ and a standard deviation of $SD=0.39$ were observed. The strongest items include "helping students follow rules" ($M=4.78$, $SD=.42$) and "promoting belief in students' abilities" ($M=4.50$, $SD=.51$), while "controlling disruptive behaviours" ($M=4.31$, $SD=.58$) appears as the weakest item.

Students

The overall mean SELTQ score for all students was 4.26 ($SD=.52$), indicating a very high score. As we can see in Table 19, the dimensions Self-

assessment and Teacher Feedback have a very high mean with 4,51 (SD= .55) and the dimension Organization and Presentation of Course Content scored a 4,20 mean (SD= ,68).

In the item analysis, item 23, "Involved in peer evaluation," received the lowest rating (M= 3.60, SD= 1.55), with the widest standard deviation, suggesting variability in teacher practices as a potential explanation for the dispersed responses. Similarly, items 10, "Examples of good work provided" (M= 3.90, SD= 1.26), and 17, "Asked instructor for support" (M= 3.95, SD= 1.02), exhibited the widest standard deviations in the sample, potentially influenced by teaching practices, given the questions' emphasis on teacher attitudes in the classroom.

The highest-rated items reflect teachers' attention to the evaluation process for the sampled students. Item 7, "Revised assignments before the exam," received the highest rating (M= 4.68, SD= .62), followed by item 13, "Appropriate teaching methods used" (M= 4.61, SD= .68), and item 5, "Assessment evaluated understanding" (M= 4.60, SD= .69). Students also considered teacher feedback, with item 19, "Implemented instructor's comments" (M= 4.61, SD= .70), being one of the best-rated items.

Within factor 2, item 21, "Assessed own progress" (M= 4.60, SD= .70), was one of the highest-rated items, contrasting with item 23, "Involved in peer evaluation," which received the lowest rating (M= 3.60, SD= 1.55) and the widest standard deviation. This suggests that teachers recognize the importance of student self-assessment but may not accord the necessary importance to peer assessment in the teaching-learning process.

Table 18 Descriptive statistics SELTQ

	N	M	SD	MAX	MIN
SELTQ	475	4.26	.52	4.79	2.04
D1. Self-Assessment and Teacher Feedback	475	4.51	.55	5	2.06
1. Assessment criteria communicated	475	4.58	.76	5	2
2. Immediate feedback given	475	4.35	.85	5	1
3. Assessment coherent with objectives	475	4.57	.71	5	1
4. Discussions held following feedback	475	4.38	.85	5	1
5. Assessment evaluated understanding	475	4.60	.69	5	2
6. Assessment was part of learning	475	4.43	.90	5	1
7. Revised assignments before exam	475	4.68	.67	5	1
8. Feedback on group assignments given	475	4.49	.85	5	1
9. Comment given to draft works	475	4.36	.86	5	1
11. Contributions encouraged and valued	475	4.44	.88	5	2

12. Contents have tasks and objectives	475	4.64	.64	5	2
13. Appropriate teaching methods used	475	4.61	.68	5	2
14. Objectives and expectations explained	475	4.48	.75	5	1
15. Opportunities given for dialogue	475	4.51	.80	5	1
18. Required performance informed	475	4.42	.88	5	1
19. Implemented instructor's comments	475	4.61	.70	5	1
D2. Organization and Presentation of Course Content	475	4.20	.68	5	2
10. Examples of good work provided	475	3.90	1.26	5	1
17. Asked the instructor for support	475	3.95	1.02	5	1
20. Asked to provide justification	475	4.41	.82	5	1
21. Assessed own progress	475	4.60	.70	5	2
22. Provided alternative explanations	475	4.41	.84	5	1
23. Involved in peer evaluation	475	3.60	1.55	5	1
24. Involved in group projects	475	4.53	.52	5	1

The results indicate that students felt their teachers effectively revised assignments before exams, ensured that course content included relevant tasks and objectives, and employed appropriate teaching methods. Students also noted that instructors' feedback was implemented and that assessments accurately reflected their understanding. Moreover, students recognized their own role in assessing their progress. These findings suggest that teachers successfully promoted self-assessment, enhanced student engagement, and provided quality feedback. Additionally, the organization and presentation of course content were positively received. However, despite the generally favorable evaluation, students reported challenges in seeking support from instructors, inconsistent provision of examples of good work, and limited involvement in peer evaluation, with these areas receiving the lowest ratings.

Comparative Analysis

Student Engagement

When comparing the results of Student Engagement it is essential to observe the following points, in TSES, items such as "motivating students with low interest" (M=4.22, SD= .49), "helping students value learning" (M=4.53, SD= .56), "calming disruptive students" (M=4.19, SD= .53), and "helping families support learning" (M=4.39, SD= .55) assess teachers' perceptions of their ability to emotionally and cognitively engage students, as well as manage challenging behaviors. In contrast, SELTQ items such as "opportunities for dialogue" (M=4.51, SD= .80), "encouraging and valuing contributions" (M=4.44, SD= .88),

and "feedback on performance" ($M=4.49$, $SD= .85$) reflect students' perspectives on the engagement fostered by teachers. Both dimensions aim to promote engagement but from distinct perspectives: TSES evaluates teachers' self-efficacy in engagement, while SELTQ reflects how students perceive practices like dialogue, feedback, and participation opportunities provided by teachers. In the TSES dimension of "Student Engagement," teachers reported high levels of perceived efficacy on items such as "Motivating students with low interest" ($M = 4.22$; $SD = .49$) and "Helping students value learning" ($M = 4.53$; $SD = .56$). However, the ability to "Calm disruptive students" had a slightly lower mean ($M = 4.19$; $SD = .53$), indicating a challenge in this area. This dimension corresponds to the students' perception in the SELTQ dimension "Self-Evaluation and Teacher Feedback," which evaluates how teachers promote engagement and dialogue in the classroom. In SELTQ, items such as "Opportunities for dialogue" received a mean score of 4.51 ($SD = .80$), while "Encouraging and valuing contributions" had a similar mean ($M = 4.4$; $SD = .88$). These results suggest a positive perception among students regarding the encouragement of dialogue and the valuing of their participation. However, it is relevant to note that aspects such as motivating students with low interest or controlling disruptive behaviours were not directly evaluated.

Instructional Strategies

The "Instructional Strategies" dimension of TSES evaluates teachers' perceptions of their ability to create and implement effective pedagogical approaches. Teachers reported high efficacy in items such as "Creating good questions" ($M = 4.67$; $SD = .48$) and "Providing alternative explanations" ($M = 4.81$; $SD = .40$). However, "Implementing differentiated strategies" had a slightly lower mean ($M = 4.31$; $SD = .62$), suggesting that some teachers may feel challenged in adapting their practices to different student needs.

In SELTQ, items related to the Self-Assessment and Teacher Feedback reflect students' perceptions of the clarity and relevance of the pedagogical strategies employed. For example, "Revised assignments before the exam" received a mean of 4.68 ($SD = .67$), while "Appropriate teaching methods used" was also rated highly ($M = 4.61$; $SD = .68$). Students considered "Assessment

coherent with objectives" ($M = 4.57$; $SD = .71$) and "Assessment criteria communicated" ($M = 4.58$; $SD = .76$) as reinforcing the coherence between teaching and course objectives.

However, an interesting discrepancy emerges between teachers' and students' perceptions regarding the implementation of differentiated strategies. Students seem to evaluate the variety of methods used more positively than the teachers themselves. When analysing the efficacy of Instructional Strategies (TSES) and Self-Assessment and Teacher Feedback (SELTQ), teachers assess items like "creating good questions" ($M=4.67$, $SD= .48$), "providing alternative explanations" ($M=4.19$, $SD= .53$), and "implementing alternative strategies" ($M=4.81$, $SD= .40$), focusing on their ability to adapt methodologies to students' needs. In SELTQ, items like "appropriate teaching methods used" ($M=4.61$, $SD= .68$), "evaluation coherent with objectives" ($M=4.57$, $SD= .71$), and "discussions held after feedback" ($M=4.38$, $SD= .85$) directly relate to the effectiveness of teaching strategies employed by teachers. Both dimensions align, addressing the use of effective strategies, but with complementary focuses.

Classroom Management

The comparison between the classroom management efficacy dimension from TSES and the corresponding items from SELTQ reveals both alignment and discrepancies in how teachers and students perceive the management of the learning environment.

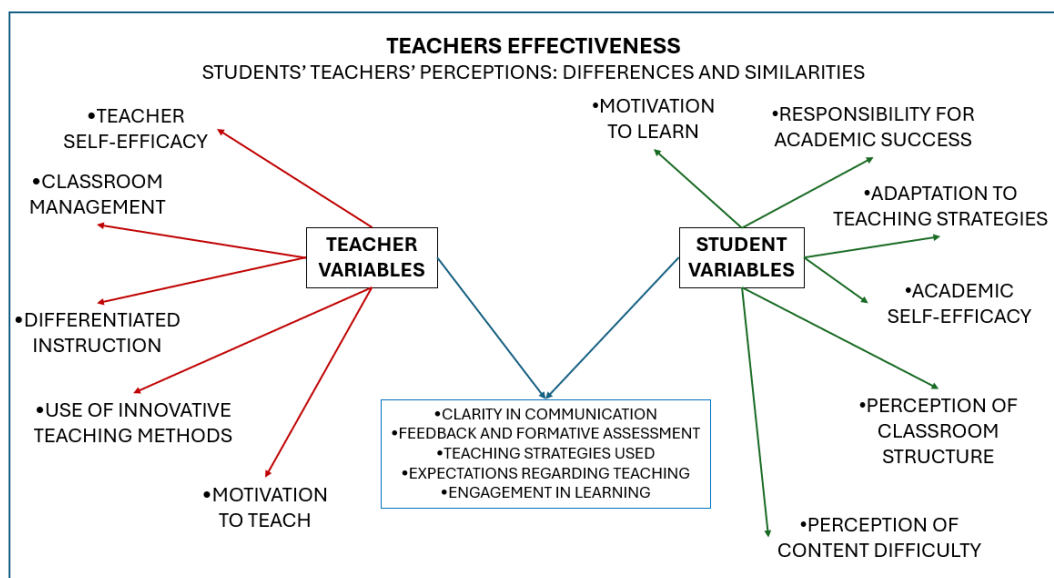
Both TSES and SELTQ demonstrate a strong perception of effective rule-setting and classroom structure. In TSES, teachers rated their efficacy in helping students follow classroom rules highly ($M=4.78$; $SD= .42$). Similarly, the SELTQ item "Contents have tasks and objectives clearly established" received a mean score of $M=4.64$ ($SD= .64$). This alignment suggests that both teachers and students recognize a well-structured classroom environment where expectations are clearly defined and consistently reinforced. The congruence in these scores indicates a shared perception of clarity in rules and objectives, suggesting effective classroom management practices regarding structure and clarity.

Teachers' perceptions of their ability to foster a positive learning climate, specifically through encouraging students to believe in their own success, were

also rated positively in TSES (M=4.50, SD= .51). This is comparable to SELTQ items emphasizing structure and positive feedback, such as "Contents have tasks and objectives clearly presented" (M=4.64, SD= .64) and "Appropriate teaching methods used" (M=4.61, SD= .68). These results suggest that both groups perceive a generally supportive classroom climate where students are encouraged to engage positively with their learning environment.

One area of divergence between TSES and SELTQ is the management of disruptive behavior. In TSES, teachers rated their efficacy in "controlling disruptive behavior" with a lower mean score (M=4.31, SD= .58) compared to other aspects of classroom management. Another notable difference is seen in how performance expectations are communicated. While TSES ratings for classroom management remain consistently high, SELTQ reveals a lower perception in the item "Examples of good work provided" (M=3.90, SD=1.26). This lower score suggests that while teachers feel confident in maintaining order and setting rules, students may feel there is a lack of clarity regarding what constitutes high-quality work. The higher standard deviation for this item further indicates greater variability in students' experiences, suggesting inconsistency in how teachers present exemplary work across classrooms.

Figure 6 Visualisation of the teacher's effectiveness differences and similarities



Discussion

Student perceptions of engagement practices were generally positive, with students frequently highlighting dialogue opportunities and feeling encouraged and valued in the classroom (Pianta et al., 2012; Klem & Connell, 2004). This indicates that students perceive the learning environment as supportive and interactive, with multiple opportunities for meaningful participation. A divergence arises regarding the handling of behavioral and motivational challenges. The TSES data indicates that teachers experience moderate difficulties in calming disruptive students and motivating those with low interest in schoolwork (Tschannen-Moran & Hoy, 2001; Woolfolk Hoy & Davis, 2006). Both instruments reflect generally positive engagement practices from the perspectives of both teachers and students. However, addressing the gaps in motivational strategies and behavior management could further strengthen classroom dynamics and ensure engagement across all dimensions of learning (Hattie, 2009; Marzano, 2006).

Teachers reported strong self-efficacy in core instructional practices, such as crafting effective questions and providing alternative explanations when students are confused (Blömeke et al., 2016; Klassen & Tze, 2014). These perceptions were closely aligned with students' positive evaluations of clearly defined course objectives and content presented in a structured manner, indicating shared views on the clarity and coherence of instructional strategies. This alignment highlights the effective use of structured pedagogical strategies that promote understanding and clarity in instruction (Hattie & Timperley, 2007; Stronge et al., 2011).

However, a discrepancy emerges in the area of differentiated instruction. Teachers reported lower confidence in implementing alternative strategies to meet the needs of diverse learners, while students rated the variety of teaching methods used in the classroom more positively (Goldhaber, Walch & Gabele, 2014). This suggests that teachers may underestimate their own effectiveness in differentiation, while students perceive a greater diversity in instructional approaches than teachers acknowledge (Wentzel, 2002; Tomlinson, 2014). Addressing this perception gap through the professional development of

differentiated strategies could help teachers build confidence while further enhancing instructional effectiveness.

Both teachers and students emphasized the importance of coherence and relevance in instructional strategies. Students positively rated the coherence of evaluations with learning objectives and the use of practical examples during lessons (Darling-Hammond, 2000; Hattie, 2009). These findings align closely with teachers' reported focus on creating meaningful connections between instructional goals and learning outcomes, reinforcing the effectiveness of current pedagogical practices (Stronge et al., 2011).

Overall, both self-assessment data from teachers and student feedback point to effective instructional strategies, emphasizing clarity, coherence, and relevance in teaching practices. However, the observed challenges in differentiation highlight an opportunity for growth, particularly in ensuring inclusivity and adaptability for diverse learning needs (Subedi & Howard, 2019; Burroughs et al., 2019).

Regarding classroom management, both teachers and students perceive classrooms as well-organized environments with clearly defined expectations (Emmer & Evertson, 2016). Teachers reported high efficacy in helping students follow classroom rules, and SELTQ results reflected similarly positive perceptions of well-structured content and clearly established tasks and objectives. This consistency indicates a strong alignment between teacher intentions and student experiences in terms of structure and clarity. Teachers also reported feeling effective in promoting student success and belief in their abilities, with students' positive feedback on clearly presented content and task expectations further supporting this perception (Marzano, Marzano & Pickering, 2003). The consistent alignment between both groups reflects a supportive classroom environment where expectations are clearly communicated and students feel encouraged to succeed.

An area for improvement involves the clarity of performance expectations. While teachers reported high efficacy in guiding student behavior and success, SELTQ results indicated that students may benefit from clearer examples of high-quality work. The variability in responses related to the provision of performance models suggests inconsistency across classrooms, emphasizing the need for

more consistent and explicit modeling of performance expectations (Hattie & Timperley, 2007; Stiggins, 2005).

In summary, the findings suggest a generally positive alignment between teacher self-efficacy and student perceptions across engagement, instructional strategies, and classroom management. However, notable gaps exist in areas such as managing disruptive behavior, motivational challenges, and differentiated instruction, pointing to opportunities for targeted professional development and refinement of assessment instruments to capture a broader spectrum of classroom dynamics.

Conclusion

This study contributes to the field of science education research by comparing teachers' and students' perceptions of the teaching-learning activities used in lessons. It also offers knowledge of the implications of the convergence and divergence of students' and teachers' perceptions of teaching-learning activities. The study serves as a foundation for assessing the need for interventions to improve the teaching-learning activities in classrooms. Furthermore, the study's conclusions may give teachers important insights to consider when reflecting on their teaching considering students' feedback and teachers' self-perceptions. This may help them appropriately adjust their teaching to meet the students' learning needs. Therefore, the study's outcomes offer insight into improving teaching and learning.

The comparative analysis between the TSES and SELTQ data reveals a strong alignment between teachers' self-efficacy and students' evaluations, particularly in instructional strategies and classroom management. Both instruments highlight positive perceptions regarding content clarity, structured presentation, and well-defined classroom rules, suggesting that core pedagogical practices are being effectively implemented.

However, certain discrepancies emerged, particularly regarding emotional engagement, motivation, and differentiated instruction. Teachers report challenges in managing disruptive behavior and motivating students with low interest, aspects that are not directly captured in the SELTQ. Furthermore, while teachers expressed lower confidence in implementing differentiated strategies,

students rated the diversity of teaching methods more positively, suggesting that teachers may underestimate their effectiveness in this area (Tomlinson, 2014).

The findings point to the need for targeted professional development aimed at enhancing strategies for emotional engagement, behavior management, and differentiated instruction. Additionally, the SELTQ could benefit from revisions to better capture the challenges teachers face, particularly in motivating disengaged students and managing classroom disruptions. Clearer pedagogical guidelines, including explicit performance models and expanded dialogue opportunities, could further support effective teaching practices.

Overall, both instruments provide valuable, complementary insights into classroom dynamics, with TSES focusing on teacher self-efficacy and SELTQ emphasizing student perceptions. By addressing the identified gaps through enhanced assessment tools and professional development, educational systems can create more inclusive and effective learning environments, ultimately improving both teaching quality and student outcomes.

Limitations and future directions

While this study offers valuable insights into the alignment between teacher self-efficacy and student perceptions of teaching quality, certain limitations must be acknowledged. The use of convenience sampling, focusing on a private school within the Portuguese educational system, restricts the generalizability of the findings. Future research should include a more diverse sample, encompassing various school types and regions, to enhance the broader applicability of the findings.

Additionally, the reliance on self-reported data from both teachers and students introduces the possibility of response bias. Despite efforts to ensure anonymity and transparency, participants may have provided socially desirable responses. Incorporating complementary data sources, such as classroom observations or academic performance metrics, could provide a more comprehensive understanding of the relationship between teacher efficacy and student engagement.

Another limitation lies in the scope of the SELTQ, which focuses on structural and instructional aspects but does not fully capture emotional

engagement and behavioral management challenges reported in the TSES. Expanding the SELTQ to include dimensions related to emotional and motivational aspects could provide a more holistic perspective of classroom dynamics.

For future directions, several areas merit further exploration. Longitudinal studies could offer insights into how teacher self-efficacy and student perceptions evolve over time and whether specific interventions lead to sustained improvements in teaching practices and student outcomes. Comparative studies across public and private institutions or diverse educational systems would help identify contextual factors influencing both teacher efficacy and student perceptions.

Additionally, professional development programs targeting specific areas identified as challenging, such as differentiated instruction and behavioral management, could be explored. Providing teachers with targeted training and feedback cycles based on both TSES and SELTQ results could help bridge the gap between self-perceptions and student evaluations. Furthermore, encouraging teachers to reflect on students' positive feedback could enhance their confidence and effectiveness in instructional strategies.

By addressing these limitations and exploring these future directions, research can contribute to more comprehensive and context-sensitive educational assessments. This, in turn, can guide the development of professional training programs and instructional strategies aimed at fostering more effective and inclusive learning environments for both teachers and students.

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**Capítulo 5. Desempenho Escolar e
Avaliação da Eficácia Docente: Um Estudo
Comparativo das Percepções de Alunos**

DESEMPENHO ESCOLAR E AVALIAÇÃO DA EFICÁCIA DOCENTE: UM ESTUDO COMPARATIVO DAS PERCEÇÕES DE ALUNOS⁵

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Resumo

A percepção da eficácia docente tem sido amplamente estudada no campo da educação, uma vez que está diretamente associada ao envolvimento dos alunos e ao seu desempenho académico. Assim, compreender como os alunos de diferentes níveis de desempenho avaliam a eficácia dos professores pode fornecer insights valiosos para a melhoria das práticas pedagógicas e para a promoção de um ensino mais inclusivo e eficaz. Este estudo investiga como a percepção da eficácia do professor varia em função do desempenho escolar dos alunos, utilizando o questionário SELTQ (Students' Evaluation of Lecturers' Teaching Questionnaire). Foram analisadas as dimensões “autoavaliação e feedback do professor” e “organização e apresentação dos conteúdos” comparando grupos de alunos com diferentes níveis de desempenho escolar: insuficiente (menor que 10 valores), suficiente (entre 10 e 13 valores), bom (entre 14 e 17 valores) e muito bom (entre 18 e 20 valores).

Utilizando os testes estatísticos não paramétricos, Kruskal-Wallis e Mann-Whitney U com correção de Bonferroni, os resultados indicaram que os alunos que apresentam melhor desempenho escolar têm uma percepção mais positiva sobre o trabalho dos professores, sugerindo que a percepção do trabalho docente

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varia de acordo com o desempenho acadêmico dos alunos. Diferenças estatisticamente significativas foram observadas em 6 itens da dimensão “Autoavaliação e feedback do professor”. Especificamente, A avaliação foi coerente com os objetivos?, A avaliação foi construída para avaliar os conhecimentos?, As matérias foram revistas antes dos testes?, Os objetivos e as expectativas foram explicados?, Fui informado do desempenho exigido?, A minha aprendizagem foi melhorada pela minha participação? e da dimensão Organização e apresentação do conteúdo: Foram solicitadas justificações para as tuas respostas? e Participei nas avaliações dos meus pares?.

Os resultados reforçam a importância de um ensino mais adaptativo e inclusivo, que leve em consideração as diferentes formas como os alunos percebem a eficácia docente. Os professores devem estar atentos às diferenças individuais para evitar que alunos com dificuldades desenvolvam percepções negativas que possam comprometer ainda mais seu desempenho e motivação. Recomenda-se que os professores adotem estratégias pedagógicas diferenciadas, como metodologias ativas e feedback contínuo, para assegurar a compreensão dos critérios avaliativos e incentivar a participação dos alunos. A promoção de um ambiente inclusivo e motivador pode reduzir discrepâncias na percepção da eficácia docente e fortalecer a aprendizagem de todos os alunos.

Palavras-chave: Eficácia da educação, avaliação do desempenho discente, capacitação de professores, avaliação da educação escolar

Introdução

A qualidade do ensino e a eficácia do professor têm sido apontadas como fatores essenciais na promoção do desempenho escolar dos alunos e no desenvolvimento de competências socioemocionais e cognitivas (Darling-Hammond, 2000; Hattie, 2009; Mesquita, 2018). Vários estudos enfatizam que as práticas pedagógicas, a gestão da sala de aula e a interação entre professor e aluno desempenham papéis centrais na aprendizagem e na motivação dos alunos (Holzberger et al., 2019; Tschannen-Moran & Hoy, 2001). Nesse contexto, a eficácia docente é frequentemente analisada em relação às suas dimensões instrucional, organizacional e emocional, destacando o impacto da clareza na

comunicação, do apoio oferecido e da equidade na relação com os alunos (Pianta et al., 2012).

Embora o impacto do professor sobre os resultados acadêmicos seja amplamente reconhecido (Darling-Hammond, 2000; Hattie, 2009), ainda existe uma lacuna significativa no entendimento de como essas percepções variam entre alunos de diferentes níveis de desempenho. Estudos apontam que práticas pedagógicas eficazes, como a ativação cognitiva e o feedback direcionado, não apenas melhoram os resultados, mas também são percebidas de forma diferenciada por alunos de perfis acadêmicos distintos (Blömeke et al., 2016; Tschannen-Moran & Hoy, 2001). Além disso, investigações destacam que professores com alta autoeficácia têm maior probabilidade de criar ambientes de aprendizagem mais motivadores, inclusivos e atentos às necessidades individuais dos alunos, beneficiando sobretudo aqueles com melhor desempenho acadêmico (Holzberger et al., 2019; Subedi & Howard, 2019).

Diferenças na Percepção da Eficácia do Professor em Função do Desempenho Escolar dos Alunos

A eficácia do professor tem sido amplamente estudada como um dos fatores mais determinantes para o sucesso acadêmico dos alunos (Kim & Seo, 2018; Stronge et al., 2011). No entanto, os estudos sugerem que essa eficácia é percebida de forma diferente dependendo do desempenho dos estudantes. Alunos com melhor desempenho acadêmico tendem a ver os professores como mais eficazes, enquanto alunos com dificuldades podem atribuir o seu desempenho a fatores externos, como o professor ou o ambiente escolar (Goldhaber et al., 2014). Esta disparidade tem implicações significativas para a forma como a eficácia docente é avaliada e para a implementação de políticas educacionais eficazes (Wentzel, 2002).

Estudos indicam que essa percepção é influenciada por múltiplos fatores, incluindo a motivação do aluno, a forma como ele responde às estratégias pedagógicas do professor e as suas expectativas em relação ao ensino (Tschannen-Moran & Hoy, 2001).

Alunos com alto desempenho são geralmente mais motivados e empenhados na sua aprendizagem. Esses alunos costumam ver o professor

como um facilitador do seu progresso, reconhecendo a eficácia da sua metodologia de ensino. Como demonstrado por Klassen & Tze (2014), a crença do professor na sua própria eficácia tem uma correlação positiva com o desempenho acadêmico dos alunos, especialmente quando os professores usam estratégias de ensino diferenciadas (Kim & Seo, 2018).

De acordo com Tschannen-Moran & Hoy (2001), a eficácia docente está ligada à capacidade do professor de motivar os alunos. No entanto, quando um aluno já está desmotivado, pode não reconhecer esse esforço e atribuir a responsabilidade do seu insucesso ao professor.

Estudos demonstram ainda que alunos com melhores resultados assumem maior responsabilidade pelo seu próprio processo de aprendizagem. A pesquisa de Boyd et al., (2009) destaca que os alunos que internalizam a responsabilidade pelo seu sucesso acadêmico percebem a eficácia do professor como um fator de reforço ao seu desempenho, em vez de a verem como a única causa do seu sucesso ou fracasso (Goldhaber et al., 2014).

Por outro lado, os alunos com dificuldades podem sentir que os métodos do professor não são suficientemente adaptados às suas necessidades e dificuldades podem ser mais propensos a externalizar a responsabilidade, atribuindo o insucesso a fatores como o professor ou o ambiente escolar pelo seu desempenho. Meng & Muñoz, (2016) demonstraram que estudantes que não têm um sentido de autoeficácia acadêmica forte tendem a avaliar negativamente a eficácia do professor, independentemente das estratégias de ensino utilizadas.

A relação entre as expectativas dos professores e o desempenho dos alunos tem sido amplamente investigada. Estudos como os de Wentzel (2002) e Palardy & Rumberger (2008) mostram que os alunos tendem a corresponder às expectativas estabelecidas pelos professores, o que é conhecido como o efeito Pigmalião.

Contudo, esta relação pode variar dependendo do desempenho dos estudantes. Para alunos de alto desempenho, expectativas elevadas são vistas como um incentivo, promovendo a autodisciplina e o empenho. Por outro lado, alunos com dificuldades podem sentir que essas expectativas são irrealistas, o que pode levar a uma percepção negativa do professor. Wahlage & Rutter (1986) descobriram que expectativas elevadas sem um suporte pedagógico adequado

podem aumentar a frustração dos alunos com dificuldades (Goldhaber, Walch, & Gabele, 2014).

A forma como os professores fornecem feedback também influencia a percepção da sua eficácia. Marzano (2006) demonstrou que um feedback contínuo e orientado para o crescimento melhora significativamente o desempenho acadêmico dos alunos. No entanto, alunos com menor desempenho podem interpretar o feedback como uma crítica em vez de uma orientação para melhorar. Hattie & Timperley (2007) destacam que a forma como o feedback é recebido depende da percepção do aluno sobre as suas próprias capacidades e da relação que tem com o professor.

Embora a investigação aponte para uma correlação positiva entre a eficácia do professor e o desempenho acadêmico dos alunos (Klassen et al., 2011), essa relação não é homogênea. Estudos como os de Burroughs et al. (2019) indicam que a percepção da eficácia docente varia de acordo com o nível de desempenho inicial do aluno. Para alunos de alto desempenho, um professor eficaz pode reforçar e acelerar a sua aprendizagem. Já para alunos com dificuldades, a eficácia docente precisa ser complementada por outras estratégias, como apoio individualizado e envolvimento parental (Kim & Seo, 2018).

A meta-análise realizada por Kim & Seo (2018) corrobora essa ideia, ao demonstrar que a relação entre eficácia do professor e desempenho dos alunos é estatisticamente significativa, mas fraca ($r = 0,10$, $p < 0,001$), sugerindo que outros fatores desempenham um papel fundamental no sucesso acadêmico.

Para mitigar essa discrepância, é essencial que os professores adotem metodologias inclusivas, ajustando estratégias pedagógicas para atender às necessidades de todos os alunos. Além disso, a criação de um ambiente de aprendizagem baseado em feedback construtivo e expectativas ajustadas pode contribuir para que todos os alunos percebam o professor como um facilitador do seu sucesso, independentemente do seu nível de desempenho (Stronge, Ward, & Grant, 2011; Kim & Seo, 2018).

Identificação do Problema

Este estudo tem como objetivo estudar se a percepção dos alunos sobre a eficácia docente difere significativamente em função do seu desempenho escolar, comparando os níveis insuficiente (menor que 10 valores), suficiente (entre 10 e 13 valores), bom (entre 14 e 17 valores) e muito bom (entre 18 e 20 valores).

Metodologia

Amostra

A amostra deste estudo foi composta por 475 alunos do ensino secundário do sistema educativo português, a frequentar uma escola privada. Dentro deste grupo, 57,7% eram do sexo feminino e 40,6% do sexo masculino. Os dados foram recolhidos entre 2020 e 2021 através de um questionário elaborado no Microsoft Forms e administrado em formato de inquérito online. A escola recebeu o link para o inquérito, juntamente com uma carta explicativa sobre a natureza e os objetivos do estudo, bem como instruções para a distribuição do inquérito online a todos os alunos. Os participantes foram completamente informados sobre o propósito do estudo e preencheram o questionário de forma anónima. A escala SELTQ (Zerihun et al., 2012) foi utilizada com a autorização dos autores da escala.

Instrumento de recolha de dados

O SELTQ (*Students' Evaluation of Lecturers' Teaching Questionnaire*) foi selecionado para este estudo pela sua reconhecida eficácia na avaliação da qualidade do ensino através das percepções dos alunos sobre as práticas pedagógicas. Este instrumento é amplamente validado e permite capturar dimensões fundamentais da eficácia docente, a autoavaliação e feedback do professor, organização e apresentação dos conteúdos (Zerihun et al., 2012). Essas dimensões alinham-se diretamente aos objetivos do estudo, que buscam investigar como o desempenho escolar pode influenciar a percepção da eficácia docente.

O SELTQ foi projetado para avaliar aspetos específicos da prática docente, como clareza na comunicação dos conteúdos, empenho dos professores em motivar os alunos e o apoio oferecido, incluindo a atenção individualizada e a capacidade de responder às dúvidas colocadas. Este instrumento é composto por questões estruturadas numa escala de Likert, que permitem captar a intensidade das perceções dos estudantes em relação a diferentes aspetos do ensino. Por meio da análise das respostas a essas questões, o estudo explora como diferentes grupos de desempenho avaliam a eficácia do professor em contextos educativos. Essa abordagem permite compreender as nuances da relação entre eficácia docente e desempenho académico, oferecendo dados para a elaboração de práticas pedagógicas mais inclusivas e adaptadas às necessidades dos alunos.

Adaptação do SELTQ ao Contexto Português

Para assegurar a relevância e a validade do questionário no contexto educativo português, foi realizada uma adaptação linguística e cultural, seguindo um processo rigoroso de tradução e retroversão (tabela 20). Por capturar a perceção dos principais beneficiários do processo educativo, o SELTQ fornece informações valiosas sobre como as práticas pedagógicas impactam a aprendizagem. Os dados recolhidos pelo SELTQ fornecem uma base robusta para identificar áreas que podem ser aprimoradas nas práticas docentes, alinhando-se aos objetivos do estudo de promover uma educação mais inclusiva e eficaz.

Em síntese, a escolha do SELTQ neste estudo é justificada pela sua validade internacional, adaptabilidade ao contexto português e relevância para investigar a relação entre o desempenho académico e a perceção dos alunos sobre a eficácia docente.

Table 19 Itens da versão portuguesa e da versão original do questionário SELTQ

SELTQ Portuguese version	SELTQ Original version
1. Os critérios de avaliação foram comunicados?	Assessment criteria communicated
2. O feedback foi fornecido de imediato?	Immediate feedback given
3. A avaliação foi coerente com os objetivos?	Assessment coherent with objectives
4. O feedback foi posteriormente analisado?	Discussions held following feedback

5. A avaliação foi construída para avaliar os conhecimentos?	Assessment evaluated understanding
6. A avaliação contribuiu para a tua aprendizagem?	Assessment was part of learning
7. As matérias foram revistas antes dos testes?	Revised assignments before exam
8. Foi fornecido feedback nos trabalhos de grupo?	Feedback on group assignments given
9. Foram fornecidos comentários sobre os trabalhos pedidos?	Comment given to draft works
10. Foram fornecidos exemplos de trabalhos bem executados?	Examples of good work provided
11. As tuas intervenções na aula foram encorajadas e valorizadas?	Contributions encouraged and valued
12. Os conteúdos incluíram tarefas e objetivos?	Contents have tasks and objectives
13. Foram utilizados métodos de ensino adequados?	Appropriate teaching methods used
14. Os objetivos e as expetativas foram explicados?	Objectives and expectations explained
15. Foram facilitadas oportunidades para diálogo?	Opportunities given for dialogue
16. A minha aprendizagem foi melhorada pela minha participação?	Learned better due to my involvement
17. Solicitei ajuda ao professor?	Asked instructor for support
18. Fui informado do desempenho exigido?	Required performance informed
19. O feedback do professor foi útil?	Implemented instructor's comments
20. Foram solicitadas justificações para as tuas respostas?	Asked to provide justifications
21. Houve autoavaliação durante o processo?	Assessed own progress
22. Foram fornecidas explicações alternativas?	Provided alternative explanations
23. Participei nas avaliações dos meus pares?	Involved in peer evaluation
24. Participei em projetos de grupo?	Involved in group projects

Procedimentos de análise de dados

Preparação dos Dados

Os dados foram organizados e reagrupados em categorias para facilitar a análise estatística e aumentar a robustez dos resultados. A variável desempenho escolar foi ajustada para lidar com grupos de tamanho reduzido, consolidando categorias com menos representatividade. Este procedimento é recomendado para evitar viés estatístico e garantir maior estabilidade nos resultados, como discutido por Field (2018) e Tabachnick et al. (2013).

Especificamente, as notas das categorias “menos de 7 valores” e “8 e 9 valores” foram agrupadas na categoria *insuficiente*, resultando nas seguintes categorias: *insuficiente* (menos de 10 valores), *suficiente* (10-13 valores), *bom* (14-17 valores) e *muito bom* (18-20 valores).

Essa consolidação permitiu uma análise comparativa mais robusta entre os grupos, minimizando o impacto de tamanhos amostrais pequenos em categorias específicas (Field, 2018).

Antes de realizar as comparações estatísticas, foi aplicado o teste de Shapiro-Wilk para verificar a normalidade da distribuição dos dados em cada

grupo e pergunta. Os resultados indicaram que os dados não seguem uma distribuição normal, justificando o uso de métodos estatísticos não paramétricos.

Testes Estatísticos Utilizados

Para avaliar as diferenças entre os grupos de desempenho escolar, foram utilizados o teste estatístico Kruskal-Wallis para identificar diferenças significativas entre mais de dois grupos independentes. Como alternativa não paramétrica ao ANOVA, este teste é apropriado para comparar distribuições quando os dados não seguem distribuição normal (McKnight & Najab, 2010; Nachar, 2008). A escolha do Kruskal-Wallis permite avaliar diferenças globais entre os grupos em relação às percepções dos alunos sobre o trabalho dos professores.

Para análises detalhadas, foi utilizado o teste Mann-Whitney U, que avalia se as distribuições de dois grupos independentes são significativamente diferentes. Esse teste foi selecionado por ser adequado para dados não paramétricos, garantindo que as comparações entre pares de grupos fossem feitas de forma rigorosa (Fay & Proschan, 2010; Hollander, Wolfe, & Chicken, 2013). Para controlar o risco de erros do tipo I (falsos positivos) devido às múltiplas comparações, foi aplicada a correção de Bonferroni, que ajusta o nível de significância ($p < .05$). Essa abordagem é essencial para garantir a validade estatística das comparações múltiplas, minimizando a inflação do erro tipo I (Armstrong, 2014; Bland & Altman, 1995). Embora seja uma abordagem conservadora, é amplamente recomendada para análises em que múltiplas comparações são realizadas.

Resultados

Os resultados serão apresentados em duas partes distintas. Na Parte 1, será realizada uma análise estatística descritiva das dimensões "Autoavaliação e feedback do professor" (D1) e "Organização e apresentação dos conteúdos" (D2), bem como da pontuação geral do questionário SELTQ, categorizando os dados de acordo com os quatro níveis de desempenho escolar dos alunos. A estatística descritiva incluirá indicadores como média, desvio-padrão, valores

mínimos e máximos para cada uma das dimensões e para o questionário no seu conjunto. Seguidamente, será conduzida uma análise inferencial para verificar se existem diferenças estatisticamente significativas entre os grupos de desempenho escolar. Para esse efeito, será utilizado o teste Kruskal-Wallis, um método estatístico não paramétrico adequado para comparar múltiplos grupos independentes.

Na Parte 2, a análise será aprofundada ao nível dos itens individuais do questionário SELTQ. Inicialmente, será realizada uma estatística descritiva para cada um deles, analisando de que forma os alunos de diferentes níveis de desempenho escolar percebem aspetos específicos da eficácia docente. Em seguida, será aplicada a estatística inferencial, recorrendo novamente ao teste Kruskal-Wallis, para identificar diferenças significativas entre os grupos em cada item do questionário.

Deste modo, a apresentação dos resultados permitirá compreender tanto a perceção global da eficácia docente, considerando dimensões mais abrangentes, como também as diferenças mais específicas ao nível dos itens individuais do questionário, proporcionando uma visão detalhada sobre a forma como os alunos avaliam a eficácia do professor em função do seu desempenho escolar.

A Tabela 21 apresenta os resultados dos testes de normalidade Kolmogorov-Smirnov e Shapiro-Wilk para as dimensões D1, D2 e score geral do questionário SELTQ. O teste de Kolmogorov-Smirnov avalia se a distribuição dos dados difere significativamente de uma distribuição normal e, para todas as variáveis, os valores da estatística KS são relativamente altos (D1 = .188, D2 = .121, SELTQ = .154), sugerindo desvios da normalidade. Além disso, os valores de significância (Sig.) são todos 0,000, indicando que a hipótese nula de normalidade é rejeitada ($p < .05$).

O teste de Shapiro-Wilk, mais sensível para amostras pequenas e médias, também mostra que as estatísticas calculadas para as variáveis estão abaixo de 1 (D1 = .816, D2 = .924, SELTQ = .866), reforçando que os dados não seguem uma distribuição normal. Os valores de significância para este teste também são todos $p < .001$, confirmando novamente a rejeição da hipótese nula de normalidade.

Table 20 Teste Normalidade

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Estatística	n	Sig.	Estatística	n	Sig.
D1	,188	475	,000	,816	475	,000
D2	,121	475	,000	,924	475	,000
SELTQ	,154	475	,000	,866	475	,000

A Tabela 22 apresenta as estatísticas descritivas das dimensões "Autoavaliação e feedback do professor" (D1) e "Organização e apresentação dos conteúdos" (D2), bem como o score geral do questionário SELTQ, categorizadas de acordo com o desempenho escolar dos alunos. Os indicadores analisados incluem o número de participantes (N), a média (M), o desvio-padrão (DP), e os valores mínimo e máximo obtidos em cada dimensão.

Os resultados indicam que, de um modo geral, os alunos avaliaram positivamente as dimensões analisadas, com médias relativamente elevadas. A dimensão "Autoavaliação e feedback do professor" (D1) apresentou a maior média global (M = 4,51), sugerindo que os alunos reconhecem e valorizam os processos de avaliação e retorno pedagógico oferecidos pelos professores. Em comparação, a dimensão "Organização e apresentação dos conteúdos" (D2) registou uma média ligeiramente inferior (M = 4.20), o que indica uma maior variabilidade nas percepções sobre a estrutura e clareza da apresentação dos conteúdos lecionados.

Ao analisar as diferentes categorias de desempenho escolar, verifica-se que os alunos com melhor rendimento académico (17-20 valores) atribuem as pontuações mais elevadas a ambas as dimensões (D1: M = 4.56; D2: M = 4.18), enquanto os alunos com notas mais baixas (7-9 valores e 10-13 valores) apresentam médias ligeiramente inferiores. Esta tendência sugere que alunos de alto desempenho percebem a eficácia do professor de forma mais positiva, possivelmente devido a uma maior capacidade de compreender os critérios de avaliação e acompanhar a organização dos conteúdos.

No entanto, a maior dispersão das respostas na dimensão "Organização e apresentação dos conteúdos" (D2), evidenciada pelo seu desvio-padrão mais elevado (DP = .685), indica que há maior variação nas percepções dos alunos quanto à estrutura e clareza do ensino. Este resultado pode refletir diferenças

nas estratégias pedagógicas utilizadas pelos professores ou na forma como os alunos interpretam e assimilam a apresentação dos conteúdos.

O score global do questionário SELTQ segue um padrão semelhante ao das dimensões individuais, apresentando uma média geral de $M = 4.26$, o que reforça a ideia de que, de modo geral, os alunos avaliam positivamente a eficácia dos professores. No entanto, ao comparar os diferentes grupos de desempenho escolar, verifica-se que os alunos com notas 17-20 valores percebem a eficácia docente de forma ligeiramente mais positiva ($M = 4.30$) em comparação com os alunos com 10-13 valores ($M = 4.20$).

Em suma, a Tabela 3 sugere que, embora a percepção global da eficácia do professor seja positiva, existem diferenças subtis entre os grupos de desempenho académico, com alunos de alto rendimento a apresentarem avaliações ligeiramente mais favoráveis.

Table 21 Estatística Descritiva dimensões e questionário SELTQ

		N	M	DP	Min	Max
D1	7 a 9	13	4,486	,557	3,19	5,00
	10 a 13	107	4,470	,593	2,06	5,00
	14 a 16	111	4,434	,641	2,06	5,00
	17 a 20	244	4,563	,489	2,31	5,00
	Total	475	4,510	,555	2,06	5,00
D2	7 a 9	13	4,352	,605	3,14	5,00
	10 a 13	107	4,167	,694	2,14	5,00
	14 a 16	111	4,259	,704	2,29	5,00
	17 a 20	244	4,177	,677	2,00	5,00
	Total	475	4,199	,685	2,00	5,00
SELTQ	7 a 9	13	4,266	,537	2,88	4,79
	10 a 13	107	4,206	,561	2,04	4,79
	14 a 16	111	4,219	,587	2,13	4,79
	17 a 20	244	4,302	,468	2,17	4,79
	Total	475	4,260	,521	2,04	4,79

Os resultados do teste Kruskal-Wallis indicaram que, na análise global das dimensões do questionário, não foram encontradas diferenças estatisticamente significativas entre os diferentes grupos de desempenho escolar ($p < .05$). Assim, a percepção geral dos alunos sobre a eficácia docente parece ser relativamente homogénea, independentemente do seu rendimento escolar. (tabela 23).

Table 22 Resultados para o Questionário e dimensões do teste Kruskal-Wallis

	N	Kruskal-Wallis	gl	p-valor
D1	475	2.841	3	.417
D2	475	2.458	3	.483
SELTQ	475	2.056	3	.561

Na tabela 24 sistematizam-se os dados descritivos, de cada uma das perguntas acima apresentadas (mínimo-máximo, média e desvio-padrão).

Table 23 Estatística Descritiva perguntas do questionário SELTQ

		N	M	DP	Min	Max
	7 a 9	13	4.31	.855	2	5
	10 a 13	107	4.58	.753	2	5
1. Os critérios de avaliação foram comunicados?	14 a 16	111	4.45	.882	2	5
	17 a 20	244	4.65	.683	2	5
	Total	475	4.58	.757	2	5
	7 a 9	13	4.38	1.044	2	5
	10 a 13	107	4.47	.883	2	5
2. O feedback foi fornecido de imediato?	14 a 16	111	4.22	.938	1	5
	17 a 20	244	4.36	.776	2	5
	Total	475	4.35	.850	1	5
	7 a 9	13	4.38	1.044	2	5
	10 a 13	107	4.43	.802	1	5
3. A avaliação foi coerente com os objetivos?	14 a 16	111	4.46	.760	3	5
	17 a 20	244	4.69	.589	2	5
	Total	475	4.57	.706	1	5
	7 a 9	13	4.08	1.038	2	5
	10 a 13	107	4.35	.802	1	5
4. O feedback foi posteriormente analisado?	14 a 16	111	4.29	1.013	1	5
	17 a 20	244	4.45	.771	2	5
	Total	475	4.38	.849	1	5
	7 a 9	13	4.54	.776	3	5
	10 a 13	107	4.64	.782	2	5
5. A avaliação foi construída para avaliar os conhecimentos?	14 a 16	111	4.46	.772	2	5
	17 a 20	244	4.66	.584	2	5
	Total	475	4.60	.687	2	5
	7 a 9	13	4.08	1.320	2	5
	10 a 13	107	4.30	1.011	1	5
6. A avaliação contribuiu para a tua aprendizagem?	14 a 16	111	4.43	.870	2	5
	17 a 20	244	4.50	.829	2	5
	Total	475	4.43	.901	1	5
	7 a 9	13	5.00	.000	5	5
	10 a 13	107	4.81	.569	2	5
7. As matérias foram revistas antes dos testes?	14 a 16	111	4.56	.670	3	5
	17 a 20	244	4.66	.705	1	5
	Total	475	4.68	.665	1	5
	7 a 9	13	4.46	.967	2	5
	10 a 13	107	4.50	.884	1	5
8. Foi fornecido feedback nos trabalhos de grupo?	14 a 16	111	4.40	.897	1	5
	17 a 20	244	4.53	.813	1	5
	Total	475	4.49	.853	1	5
	7 a 9	13	4.54	.877	2	5

	10 a 13	107	4.36	.944	1	5
9. Foram fornecidos comentários sobre os trabalhos pedidos?	14 a 16	111	4.23	1.053	1	5
	17 a 20	244	4.41	.745	2	5
	Total	475	4.36	.875	1	5
	7 a 9	13	4.31	1.032	2	5
10. Foram fornecidos exemplos de trabalhos bem executados?	10 a 13	107	3.87	1.353	1	5
	14 a 16	111	3.88	1.256	1	5
	17 a 20	244	3.89	1.226	1	5
	Total	475	3.90	1.256	1	5
	7 a 9	13	4.46	.967	2	5
11. As tuas intervenções na aula foram encorajadas e valorizadas?	10 a 13	107	4.43	.933	2	5
	14 a 16	111	4.34	.939	2	5
	17 a 20	244	4.50	.819	2	5
	Total	475	4.44	.878	2	5
	7 a 9	13	4.92	.277	4	5
12. Os conteúdos incluíram tarefas e objetivos?	10 a 13	107	4.58	.673	2	5
	14 a 16	111	4.55	.735	2	5
	17 a 20	244	4.69	.582	2	5
	Total	475	4.64	.639	2	5
	7 a 9	13	4.38	1.044	2	5
13. Foram utilizados métodos de ensino adequados?	10 a 13	107	4.64	.706	2	5
	14 a 16	111	4.60	.678	2	5
	17 a 20	244	4.61	.642	2	5
	Total	475	4.61	.677	2	5
	7 a 9	13	4.54	.660	3	5
14. Os objetivos e as expetativas foram explicados?	10 a 13	107	4.30	.838	1	5
	14 a 16	111	4.44	.817	2	5
	17 a 20	244	4.58	.659	2	5
	Total	475	4.48	.747	1	5
	7 a 9	13	4.46	1.127	1	5
15. Foram facilitadas oportunidades para diálogo?	10 a 13	107	4.38	.928	1	5
	14 a 16	111	4.63	.673	2	5
	17 a 20	244	4.52	.767	2	5
	Total	475	4.51	.799	1	5
	7 a 9	13	4.08	1.382	1	5
16. A minha aprendizagem foi melhorada pela minha participação?	10 a 13	107	4.02	1.046	2	5
	14 a 16	111	4.33	.867	1	5
	17 a 20	244	4.39	1.010	1	5
	Total	475	4.28	1.007	1	5
	7 a 9	13	3.77	1.166	2	5
17. Solicitei ajuda ao professor?	10 a 13	107	3.75	1.029	2	5
	14 a 16	111	4.11	.938	2	5
	17 a 20	244	3.98	1.032	1	5
	Total	475	3.95	1.019	1	5
	7 a 9	13	4.62	1.121	1	5
18. Fui informado do desempenho exigido?	10 a 13	107	4.24	.970	1	5
	14 a 16	111	4.32	1.028	1	5
	17 a 20	244	4.53	.722	1	5
	Total	475	4.42	.878	1	5
	7 a 9	13	4.62	.650	3	5
19. O feedback do professor foi útil?	10 a 13	107	4.52	.793	2	5
	14 a 16	111	4.56	.709	2	5
	17 a 20	244	4.67	.641	2	5
	Total	475	4.61	.695	2	5
	7 a 9	13	4.62	.650	3	5
20. Foram solicitadas justificações para as tuas respostas?	10 a 13	107	4.24	.889	1	5
	14 a 16	111	4.41	.846	1	5
	17 a 20	244	4.48	.767	2	5
	Total	475	4.41	.816	1	5
21. Houve autoavaliação durante o processo?	7 a 9	13	4.77	.599	3	5

	10 a 13	107	4.64	.662	2	5
	14 a 16	111	4.62	.647	3	5
	17 a 20	244	4.56	.738	2	5
	Total	475	4.60	.697	2	5
	7 a 9	13	4.31	1.109	1	5
	10 a 13	107	4.38	.876	1	5
22. Foram fornecidas explicações alternativas?	14 a 16	111	4.41	.813	2	5
	17 a 20	244	4.42	.815	2	5
	Total	475	4.41	.835	1	5
	7 a 9	13	3.92	1.441	1	5
	10 a 13	107	3.78	1.519	1	5
23. Participei nas avaliações dos meus pares?	14 a 16	111	3.84	1.462	1	5
	17 a 20	244	3.39	1.590	1	5
	Total	475	3.60	1.551	1	5
	7 a 9	13	4.77	.832	2	5
	10 a 13	107	4.50	1.004	1	5
24. Participei em projetos de grupo?	14 a 16	111	4.55	.828	2	5
	17 a 20	244	4.51	.954	1	5
	Total	475	4.53	.933	1	5

A Tabela 5 apresenta as estatísticas descritivas de cada uma das perguntas do questionário SELTQ, considerando os diferentes grupos de desempenho escolar. Os indicadores analisados incluem o número de participantes (N), a média (M), o desvio-padrão (DP) e os valores mínimo e máximo obtidos em cada questão. Esta análise permite compreender como os alunos de diferentes níveis de rendimento académico percebem aspetos específicos da eficácia do professor.

Os resultados indicam que, de forma geral, a perceção dos alunos sobre a eficácia docente é positiva, com médias relativamente elevadas em todas as questões. No entanto, verificam-se variações subtis entre os grupos de desempenho escolar, sugerindo que alguns aspetos do ensino são percebidos de forma diferenciada consoante o nível de rendimento académico do aluno. Os alunos com melhor rendimento académico tendem a avaliar de forma mais positiva a coerência da avaliação, a clareza dos objetivos, a utilidade da participação nas aulas e a revisão dos conteúdos antes dos testes. Em contraste, alunos com menores notas demonstram uma perceção menos favorável destes aspetos, o que pode estar relacionado com dificuldades na interpretação das instruções, menor envolvimento no processo de aprendizagem ou diferenças na forma como percebem a interação com os professores.

Na tabela 25 os resultados do teste Kruskal-Wallis analisam se a distribuição das respostas às diferentes questões varia entre categorias de desempenho escolar. Nesta análise algumas questões revelaram diferenças

significativas, nomeadamente a avaliação foi coerente com os objetivos ($p = .003$), a avaliação foi construída para avaliar os conhecimentos ($p = .043$) as matérias foram revistas antes dos testes? ($p < .001$), os objetivos e as expectativas foram explicados ($p = .009$), a aprendizagem foi melhorada pela participação ($p = .004$), fui informado do desempenho exigido ($p = .034$), foram solicitadas justificações para as tuas respostas ($p = .039$) e participei nas avaliações dos meus pares ($p = .028$). Estes resultados sugerem que os alunos com diferentes níveis de desempenho escolar percebem estes aspetos de forma distinta, possivelmente devido a diferenças no seu nível de envolvimento, na compreensão das expectativas académicas ou no apoio recebido.

Enquanto a perceção global sobre o ensino e a avaliação se mantém relativamente homogénea entre os alunos, certos aspetos específicos parecem ser influenciados pelo desempenho escolar, destacando a importância de considerar estratégias diferenciadas para melhorar a experiência de aprendizagem de todos os estudantes.

Table 24 Resultados para as perguntas do questionário do teste Kruskal-Wallis

Itens	N	Kruskal-Wallis	gl	p-valor
1. Os critérios de avaliação foram comunicados?	475	7.211	3	.065
2. O feedback foi fornecido de imediato?	475	7.036	3	.071
3. A avaliação foi coerente com os objetivos?	475	14.050	3	.003
4. O feedback foi posteriormente analisado?	475	3.820	3	.282
5. A avaliação foi construída para avaliar os conhecimentos?	475	8.171	3	.043
6. A avaliação contribuiu para a tua aprendizagem?	475	3.491	3	.322
7. As matérias foram revistas antes dos testes?	475	18.505	3	.000
8. Foi fornecido feedback nos trabalhos de grupo?	475	3.580	3	.311
9. Foram fornecidos comentários sobre os trabalhos pedidos?	475	1.724	3	.632
10. Foram fornecidos exemplos de trabalhos bem executados?	475	1.447	3	.694
11. As tuas intervenções na aula foram encorajadas e valorizadas?	475	1.969	3	.579
12. Os conteúdos incluíram tarefas e objetivos?	475	6.330	3	0.97
13. Foram utilizados métodos de ensino adequados?	475	.869	3	.833
14. Os objetivos e as expectativas foram explicados?	475	11.459	3	.009
15. Foram facilitadas oportunidades para diálogo?	475	4.728	3	.193
16. A minha aprendizagem foi melhorada pela minha participação?	475	13.601	3	.004
17. Solicitei ajuda ao professor?	475	7.286	3	.063
18. Fui informado do desempenho exigido?	475	8.656	3	.034
19. O feedback do professor foi útil?	475	4.782	3	.188
20. Foram solicitadas justificações para as tuas respostas?	475	8.350	3	.039
21. Houve autoavaliação durante o processo?	475	2.271	3	.518
22. Foram fornecidas explicações alternativas?	475	.191	3	.979
23. Participei nas avaliações dos meus pares?	475	9.101	3	0.28
24. Participei em projetos de grupo?	475	2.025	3	.567

Assim, analisando os resultados constatamos que as perguntas 3, 5, 7, 14, 16, 18, 20 e 23 apresentam valores estatisticamente significativos.

Table 25 Teste estatístico Kruskal-Wallis por pergunta por grupos com correção de Bonferroni

	Desemp. escolar	Desemp. escolar	p-valor	p-valor ajust. ^a
3. A avaliação foi coerente com os objetivos?	10 a 13 14 a 16	17 a 20 17 a 20	.001 .007	.006 .040
5. A avaliação foi construída para avaliar os conhecimentos?	14 a 16	10 a 13	.007	.043
7. As matérias foram revistas antes dos testes?	14 a 16	10 a 13 7 a 9	.000 .007	.001 .039
14. Os objetivos e as expectativas foram explicados?	10 a 13	17 a 20	.001	.004
16. A minha aprendizagem foi melhorada pela minha participação?	10 a 13	17 a 20	.000	.001
18. Fui informado do desempenho exigido?	10 a 13	14 a 16 17 a 20	.015 .033	.091 .196
20. Foram solicitadas justificações para as tuas respostas?	10 a 13	17 a 20	.006	.035
23. Participei nas avaliações dos meus pares?	17 a 20	10 a 13 14 a 16	.026 .011	.158 .066

^aOs valores de significância foram ajustados pela correção de Bonferroni para múltiplos testes

A análise das respostas individuais ao questionário SELTQ através do Teste estatístico Kruskal-Wallis por pergunta por grupos com correção de Bonferroni (tabela 26) revelou que, embora a percepção geral da eficácia do professor não varie significativamente entre os diferentes níveis de desempenho escolar, algumas questões específicas apresentaram diferenças estatisticamente significativas. Isto indica que determinados aspetos do ensino e da avaliação são percebidos de forma diferenciada pelos alunos conforme o seu desempenho académico.

Uma das questões que apresentou diferenças significativas foi “A avaliação foi coerente com os objetivos?” ($p = .003$). Os alunos com melhor desempenho escolar (14-16 valores e 17-20 valores) atribuíram uma pontuação mais elevada a esta questão, enquanto aqueles com notas entre 10-13 valores apresentaram uma percepção menos positiva. A análise post-hoc com correção de Bonferroni revelou diferenças estatisticamente significativas entre os alunos com 10-13 valores e aqueles com 17-20 valores ($p = .006$), e entre os alunos com 14-16 valores e aqueles com 17-20 valores ($p = .040$) sugerindo que os

alunos com menor rendimento podem ter dificuldades em perceber a relação entre a avaliação e os objetivos pedagógicos definidos pelo professor.

Na questão “A avaliação foi construída para avaliar os conhecimentos?” também apresentou diferenças estatisticamente significativas ($p = .043$). Os alunos com notas mais elevadas (14-16 valores) tiveram uma percepção mais positiva sobre a revisão dos conteúdos, em comparação com os alunos de 10-13 valores ($p = .043$). Este resultado pode indicar que os alunos de melhor desempenho estão mais atentos aos momentos de revisão, enquanto os de menor rendimento podem sentir que a revisão não foi suficiente ou não foi conduzida de forma eficaz para atender às suas necessidades.

A questão “As matérias foram revistas antes dos testes?” também apresentou diferenças estatisticamente significativas ($p = .000$). Os alunos com notas mais elevadas (14-16 valores) tiveram uma percepção mais positiva sobre a revisão dos conteúdos, em comparação com os alunos de 10-13 valores ($p = .001$) e em relação aos alunos 7-9 valores ($p = .039$). Este resultado pode indicar que os alunos de melhor desempenho estão mais atentos aos momentos de revisão, enquanto os de menor rendimento podem sentir que a revisão não foi suficiente ou não foi conduzida de forma eficaz para atender às suas necessidades.

A análise da questão “Os objetivos e as expectativas foram explicados?” ($p = .009$) revelou que os alunos com melhores notas (17-20 valores) consideram que os professores comunicam de forma mais clara os objetivos e expectativas das aulas, ao contrário dos alunos de 10-13 valores, que demonstraram menor concordância com esta afirmação ($p = .001$). Esta discrepância pode estar relacionada com dificuldades dos alunos de menor desempenho em interpretar as informações fornecidas pelos professores ou com diferenças na forma como os professores comunicam essas expectativas a diferentes grupos de alunos.

Outra questão que apresentou diferenças estatisticamente significativas foi “A minha aprendizagem foi melhorada pela minha participação?” ($p = .004$). Os alunos com notas mais altas (17-20 valores) indicaram que a sua participação teve um impacto mais positivo na aprendizagem, enquanto os alunos com notas mais baixas (10-13 valores) apresentaram uma percepção menos favorável ($p = .001$). Estes resultados sugerem que os alunos de melhor desempenho são mais participativos e sentem que o seu envolvimento contribui para o seu sucesso

académico, ao passo que os alunos de menor rendimento podem sentir que a participação em aula não influencia tanto o seu desempenho.

A questão “Fui informado do desempenho exigido?” ($p = .034$). Os alunos com melhor desempenho escolar (14-16 valores e 17-20 valores) atribuíram uma pontuação mais elevada a esta questão, enquanto aqueles com notas entre 10-13 valores apresentaram uma percepção menos positiva. A análise post-hoc com correção de Bonferroni revelou não existirem diferenças estatisticamente significativas entre os alunos com 10-13 valores e aqueles com 17-20 valores ($p = .196$), e entre os alunos com 14-16 valores ($p = .091$). Este resultado sugere que os alunos de menor rendimento podem sentir que não recebem informação suficientemente clara sobre os critérios de avaliação ou podem ter dificuldades em interpretar essas diretrizes, no entanto sem valor estatístico.

A questão “Foram solicitadas justificações para as tuas respostas?” ($p = .035$) também demonstrou diferenças significativas, com alunos de 17-20 valores a avaliarem de forma mais positiva a clareza da comunicação dos critérios de desempenho em relação aos alunos de 10-13 valores ($p = .035$). Este resultado sugere que os alunos com melhor desempenho escolar (17-20 valores) percebem que os professores solicitam justificações para as suas respostas com maior frequência e clareza, enquanto os alunos com desempenho mais baixo (10-13 valores) podem sentir que essa prática é menos enfatizada ou compreendida.

Por fim, a questão “Participei nas avaliações dos meus pares?” ($p = .028$) não apresentou diferenças significativas entre os grupos de desempenho escolar. Os alunos com melhores notas (17-20 valores) relataram uma maior participação neste tipo de atividade em comparação com os alunos de menor rendimento. Esta diferença pode refletir uma maior predisposição dos alunos com melhor desempenho para interagir com os colegas e participar em processos avaliativos colaborativos.

Discussão

Os resultados obtidos neste estudo indicam que a percepção da eficácia do professor pelos alunos varia em função do seu desempenho académico,

ainda que essa variação não seja uniforme em todas as dimensões analisadas. A análise global das dimensões "Autoavaliação e feedback do professor" e "Organização e apresentação dos conteúdos" não revelou diferenças estatisticamente significativas entre os diferentes grupos de desempenho escolar, sugerindo que, de forma geral, os alunos avaliam a eficácia docente de maneira semelhante, independentemente do seu rendimento académico. No entanto, quando analisadas as respostas individuais ao questionário SELTQ, algumas questões específicas apresentaram diferenças significativas, indicando que determinados aspetos do ensino e da avaliação são percebidos de forma distinta pelos alunos consoante o seu desempenho. Estes resultados estão alinhados com estudos prévios que apontam para a relação entre a perceção da eficácia docente e o desempenho académico dos alunos (Goldhaber, Walch & Gabele, 2014; Hattie, 2009; Klassen & Tze, 2014; Kim & Seo, 2018). Além disso, investigações sobre autoeficácia docente e impacto nas perceções dos alunos e sobre como a clareza na comunicação e a revisão dos conteúdos influenciam a experiência de aprendizagem (Marzano, 2006; Hattie & Timperley, 2007) reforçam a importância de considerar múltiplos fatores que afetam a avaliação da eficácia dos professores.

Uma das principais diferenças identificadas diz respeito à coerência entre a avaliação e os objetivos pedagógicos. Os alunos com melhor desempenho escolar tendem a perceber a avaliação como mais alinhada com os objetivos das aulas, enquanto aqueles com notas mais baixas demonstram maior dificuldade em reconhecer essa coerência. Este resultado pode estar relacionado com o facto de alunos de menor rendimento académico terem dificuldades na interpretação dos critérios avaliativos ou não compreenderem completamente os objetivos de aprendizagem definidos pelo professor. Estudos anteriores sugerem que a perceção da avaliação como um reflexo justo do que foi ensinado pode estar associada ao nível de envolvimento e compreensão dos alunos sobre o processo de ensino-aprendizagem (Goldhaber, Walch & Gabele, 2014).

Outro aspeto relevante é a perceção dos alunos sobre a revisão dos conteúdos antes dos testes. Alunos com melhor desempenho académico relataram que as matérias foram mais frequentemente revistas antes das provas, enquanto os alunos com notas mais baixas tiveram uma perceção menos favorável. Esta discrepância pode indicar que os alunos de alto rendimento estão

mais atentos e aproveitam melhor as oportunidades de revisão oferecidas pelos professores, ou pode sugerir que os alunos com dificuldades sentem necessidade de um maior suporte antes das avaliações. A literatura tem demonstrado que práticas pedagógicas que reforçam a revisão e o esclarecimento de dúvidas antes das provas podem beneficiar especialmente alunos de menor desempenho, ajudando-os a estruturar melhor o seu estudo (Marzano, 2006; Hattie & Timperley, 2007).

A forma como os objetivos e expectativas das aulas são comunicados também se revelou um fator diferenciador. Alunos com notas mais altas indicaram que os professores explicam de forma clara os objetivos das aulas, enquanto aqueles com notas mais baixas apresentaram uma percepção menos positiva. Esta diferença pode dever-se a dificuldades na interpretação das diretrizes por parte dos alunos com menor rendimento ou a possíveis lacunas na comunicação docente que afetam particularmente este grupo. Uma comunicação clara e eficaz dos objetivos de aprendizagem tem sido apontada como um fator essencial para a motivação e envolvimento dos alunos, especialmente daqueles que enfrentam dificuldades acadêmicas (Stronge, Ward & Grant, 2011; Wentzel, 2002).

A relação entre a participação dos alunos na aula e a sua percepção da aprendizagem também se destacou nos resultados. Os alunos com melhor desempenho escolar relataram que a sua participação melhorou significativamente a sua aprendizagem, enquanto os alunos com menores notas não perceberam este impacto de forma tão acentuada. Estes resultados sugerem que alunos com maior rendimento estão mais envolvidos e sentem que a sua participação ativa contribui para o seu sucesso acadêmico. Por outro lado, alunos de menor desempenho podem sentir que, mesmo participando, não conseguem obter os mesmos benefícios, o que pode ser um reflexo de dificuldades na apropriação dos conteúdos ou de uma menor autoconfiança nas suas capacidades acadêmicas (Klassen & Tze, 2014; Kim & Seo, 2018).

Outro resultado relevante foi a diferença na percepção sobre a clareza da comunicação do desempenho exigido. Alunos com melhor rendimento acadêmico avaliaram de forma mais positiva a forma como os professores indicam as expectativas e critérios de avaliação, enquanto alunos de menor desempenho demonstraram maior incerteza quanto ao que lhes era exigido.

Este resultado reforça a importância de garantir que todos os alunos compreendem os padrões de desempenho esperados, pois a falta de clareza pode afetar negativamente a motivação e o planejamento do estudo, especialmente entre os alunos que já apresentam dificuldades.

Por fim, verificou-se que alunos com melhores notas relataram maior envolvimento em avaliações entre pares, enquanto aqueles com notas mais baixas indicaram menor participação nessas atividades. Este resultado pode indicar que alunos com alto rendimento se sentem mais à vontade para interagir com os colegas em processos de avaliação, enquanto alunos com dificuldades podem sentir insegurança ao avaliar ou serem avaliados pelos seus pares. Estudos sugerem que a avaliação entre pares pode ser uma ferramenta poderosa para promover a autonomia dos alunos e reforçar a aprendizagem, especialmente quando utilizada de forma estruturada e acompanhada pelo professor (Hattie, 2009).

De um modo geral, os resultados deste estudo estão em linha com a literatura existente, que aponta para uma correlação entre o desempenho acadêmico e a percepção da eficácia do professor (Goldhaber et al., 2014; Klassen & Tze, 2014). Alunos de melhor rendimento tendem a ter uma visão mais positiva da organização das aulas, dos critérios de avaliação e da sua própria participação no processo de ensino-aprendizagem. Por outro lado, alunos com menores desempenhos podem sentir que os critérios não são suficientemente claros ou que os métodos de ensino não atendem plenamente às suas necessidades. Estes resultados reforçam a importância de práticas pedagógicas mais adaptativas, que considerem as diferentes percepções e necessidades dos alunos, garantindo que todos tenham um entendimento claro dos objetivos e critérios de avaliação, bem como oportunidades para melhorar a sua participação e envolvimento na aprendizagem.

Com base nestes resultados, recomenda-se que os professores adotem estratégias pedagógicas diferenciadas para garantir que todos os alunos compreendam claramente os critérios avaliativos e sintam que a sua participação contribui para o seu desenvolvimento acadêmico. O uso de metodologias ativas, feedback contínuo e oportunidades de envolvimento em avaliações formativas pode ajudar a reduzir as discrepâncias na percepção da eficácia docente entre alunos de diferentes níveis de desempenho. Além disso, a criação de um

ambiente de aprendizagem mais inclusivo e motivador pode contribuir para que todos os alunos desenvolvam uma percepção mais positiva do papel do professor e do impacto do ensino na sua aprendizagem.

Conclusão

Os resultados deste estudo sublinham a influência do desempenho escolar na percepção da eficácia do professor pelos alunos. Embora a análise global das dimensões "Autoavaliação e feedback do professor" e "Organização e apresentação dos conteúdos" não tenha revelado diferenças estatisticamente significativas entre os grupos de desempenho escolar, a análise detalhada por pergunta evidenciou discrepâncias relevantes em aspetos específicos do ensino e da avaliação. Estes resultados indicam que, ainda que os alunos percecionem de forma relativamente homogénea a eficácia docente, certas dimensões do processo pedagógico são experienciadas de maneira diferenciada, consoante o seu rendimento académico.

Os alunos com melhores desempenhos académicos tendem a avaliar de forma mais positiva a coerência da avaliação com os objetivos das aulas, a clareza na explicitação das expetativas e critérios de avaliação, a revisão dos conteúdos antes dos testes e a importância da sua participação para a aprendizagem. Em contraste, os alunos com menor rendimento escolar revelam uma percepção menos favorável nestes aspetos, o que pode estar associado a dificuldades na interpretação dos critérios avaliativos, menor envolvimento nas atividades letivas ou menor autoconfiança no seu desempenho académico.

Estes resultados reforçam a necessidade de práticas pedagógicas mais inclusivas e diferenciadas, de modo a garantir que todos os alunos compreendam os objetivos e critérios de avaliação e se sintam incentivados a participar ativamente no seu processo de aprendizagem. A adoção de estratégias de ensino mais interativas e adaptadas às necessidades individuais dos alunos pode contribuir para mitigar eventuais dificuldades e promover uma percepção mais equitativa da eficácia docente. Além disso, o reforço da comunicação entre professores e alunos, com um foco na clarificação das expetativas e na oferta de feedback construtivo, pode favorecer uma experiência de aprendizagem mais positiva para todos.

Em suma, este estudo destaca a importância da adaptação das práticas pedagógicas para atender às diferentes necessidades dos alunos e garantir que todos tenham acesso a um ensino eficaz e motivador. A percepção da eficácia do professor não depende apenas das suas práticas, mas também da forma como os alunos interagem com as estratégias pedagógicas implementadas. Assim, para promover um ensino verdadeiramente inclusivo, é essencial investir em abordagens que valorizem a participação ativa dos alunos, assegurem a transparência na avaliação e proporcionem um ambiente de aprendizagem que favoreça o sucesso acadêmico de todos. Recomenda-se que os professores adotem estratégias diferenciadas para comunicar com mais clareza os objetivos das aulas, reforçar a revisão dos conteúdos antes dos testes e incentivar uma participação mais ativa dos alunos com menor desempenho, promovendo um ensino mais equitativo e eficaz.

Limitações e Recomendações

Apesar das contribuições deste estudo, algumas limitações devem ser consideradas. A utilização de um questionário autoavaliativo pode introduzir viés nas respostas, uma vez que a percepção dos alunos sobre a eficácia do professor pode ser influenciada por fatores subjetivos, como a motivação individual e a relação interpessoal com o docente. Além disso, o tamanho reduzido da amostra em algumas categorias pode ter limitado a detecção de diferenças estatisticamente significativas em certas dimensões da eficácia docente. Futuros estudos poderão aprofundar esta análise através da inclusão de métodos qualitativos, como entrevistas e grupos focais, bem como da consideração de fatores adicionais, como o contexto socioeconômico dos alunos e o impacto de diferentes abordagens pedagógicas na sua percepção da eficácia docente.

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Conclusão

A eficácia docente tem sido amplamente estudada como um fator determinante no sucesso educativo, refletindo-se no desempenho acadêmico dos alunos e na qualidade do ensino. A capacidade dos professores de motivar, orientar e estruturar estratégias pedagógicas eficazes influencia diretamente o processo de aprendizagem e o desenvolvimento das competências dos alunos. Neste contexto, compreender os diferentes aspetos que compõem a eficácia do professor torna-se essencial para otimizar práticas educativas e reforçar o impacto positivo do ensino.

A presente investigação explora diferentes dimensões da eficácia docente, analisando como os professores influenciam o desempenho escolar dos alunos e quais os fatores que contribuem para a eficácia docente.

Especificamente, esta investigação pretendeu responder à seguinte questão de investigação: *"Quais as principais características da eficácia docente e como é percebida por professores e alunos?"*. Desta questão mais geral exploraram-se as seguintes subquestões. *"Quais as principais características dos professores eficazes?"*, *"Quais as principais dimensões associadas à autoeficácia docente na perspetiva de professores portugueses e internacionalmente?"*, *"Quais as percepções dos alunos sobre a eficácia docente?"*, *"Quais são as divergências e convergências entre as percepções dos professores e dos alunos sobre a eficácia docente?"*, *"De que forma o desempenho académico dos alunos influencia a sua percepção sobre a eficácia docente?"*.

Cada uma destas sub-questões originou um estudo, organizado no formato de artigo.

O estudo 1 "How teachers affect students' performance? Evidence from a systematic literature review" procurou responder à subquestão: *"Quais as principais características dos professores eficazes?"*.

Este ofereceu uma visão abrangente sobre a relação entre a eficácia dos professores e o desempenho académico dos alunos, destacando a importância da experiência docente e da adaptação das práticas pedagógicas às

necessidades dos estudantes. Os dados apontam que professores eficazes possuem um conjunto de características que influenciam diretamente o desempenho académico dos alunos. Em primeiro lugar, destacam-se as dimensões pessoais do professor, nomeadamente a sua autoeficácia, ou seja, a crença na sua capacidade de ensinar e impactar positivamente os estudantes. Além disso, a experiência e a qualificação desempenham um papel essencial, uma vez que professores com mais anos de serviço tendem a desenvolver um maior domínio das estratégias pedagógicas, resultando numa melhor aprendizagem dos alunos. O conhecimento aprofundado do conteúdo lecionado, aliado a uma forte base pedagógica, também se revela fundamental para a eficácia do ensino.

No que diz respeito às práticas instrucionais, a clareza na exposição dos conteúdos e a organização do discurso são aspetos cruciais para garantir que os alunos compreendem a matéria. A ativação cognitiva, que envolve o estímulo ao pensamento crítico e à ligação entre conceitos, promove um maior envolvimento e motivação dos estudantes. Paralelamente, uma gestão eficaz da sala de aula, garantindo um ambiente estruturado e disciplinado, favorece o foco e a participação ativa dos alunos no processo de aprendizagem.

Outro fator essencial é o comportamento e a interação do professor com os alunos. O apoio académico e pessoal, demonstrado através da empatia, do respeito e do incentivo à autonomia, contribui para a criação de um ambiente de aprendizagem mais positivo e produtivo. Professores eficazes são aqueles que acreditam no potencial dos seus alunos, estabelecem expectativas elevadas e os motivam a alcançar um desempenho académico de excelência. Estes aspetos demonstram que a eficácia do professor não depende apenas da sua formação ou experiência, mas também da sua capacidade de adaptação às necessidades dos alunos, da utilização de estratégias pedagógicas eficazes e da criação de um ambiente de ensino estimulante e inclusivo.

No estudo 2: "Portuguese version of the Teachers' Sense of Efficacy Scale: validation Study" procurou-se responder à subquestão: "Quais as principais dimensões associadas à autoeficácia docente, na perspetiva de professores portugueses e internacionalmente?". Neste estudo, validou-se a escala TSES no contexto português, permitindo uma análise objetiva da autoeficácia dos docentes e do seu impacto no ensino. Neste estudo, a

autoeficácia docente, conforme validado pela versão portuguesa da Teachers' Sense of Efficacy Scale (TSES), é analisada em três dimensões fundamentais, tanto no contexto português como internacionalmente. A primeira dimensão é a eficácia para o envolvimento dos alunos, que diz respeito à capacidade do professor para motivar e incentivar os estudantes a valorizar a aprendizagem, mantendo o interesse nas atividades escolares. Professores que demonstram elevada autoeficácia neste domínio sentem-se mais preparados para estimular os alunos e ajudá-los a superar desafios académicos. A segunda dimensão é a eficácia na gestão da sala de aula, que se refere à competência do docente para estabelecer regras eficazes, manter a disciplina e lidar com comportamentos disruptivos, criando um ambiente de aprendizagem organizado e propício ao ensino. A terceira dimensão corresponde à eficácia nas estratégias de ensino, ou seja, à confiança dos professores na sua capacidade para utilizar metodologias pedagógicas diversificadas, adaptar abordagens didáticas às necessidades dos alunos e implementar estratégias eficazes que garantam a compreensão dos conteúdos.

O estudo realizado confirma que estas três dimensões são consistentes na adaptação portuguesa da TSES, alinhando-se com investigações internacionais conduzidas em países como Singapura, México, Sérvia e Myanmar. As comparações indicam que os professores portugueses, à semelhança dos seus homólogos internacionais, apresentam níveis elevados de autoeficácia, destacando-se sobretudo na dimensão do envolvimento dos alunos. Além disso, verificou-se que a perceção de autoeficácia dos professores pode ser influenciada por fatores como a experiência profissional, o contexto escolar e a formação pedagógica, sendo um elemento determinante para a qualidade do ensino e o sucesso académico dos estudantes.

A validação da TSES no contexto português representa um avanço significativo, pois permite uma avaliação objetiva e fiável da autoeficácia docente. Este instrumento pode ser utilizado para identificar áreas que requerem maior desenvolvimento profissional, bem como para orientar a implementação de estratégias educativas mais eficazes. Ao reconhecerem as suas próprias forças e fragilidades, os professores podem beneficiar de formações mais direcionadas, contribuindo para um ensino de maior qualidade e para melhores resultados no desempenho dos alunos.

O estudo 3 “Portuguese version of the Student Evaluation of Learning and Teaching Questionnaire (SELTQ): a validation Study” associado à subquestão: “Quais as percepções dos alunos sobre a eficácia docente?”, visou explorar a avaliação da eficácia docente sob a perspectiva dos alunos, destacando a importância de metodologias interativas, feedback contínuo e estratégias diferenciadas para a promoção da aprendizagem. Os alunos percebem a eficácia docente com base em dois aspetos fundamentais: a autoavaliação e o feedback do professor, e a organização e apresentação dos conteúdos. No que diz respeito à autoavaliação e ao feedback, os estudantes valorizam professores que incentivam a participação ativa, fornecem comentários construtivos e esclarecem os critérios de avaliação, permitindo que reflitam sobre o seu próprio desempenho académico. Além disso, consideram essencial que a avaliação seja coerente com os objetivos de aprendizagem e que o feedback recebido seja útil para o seu progresso.

Por outro lado, a organização e apresentação dos conteúdos são igualmente determinantes na percepção da qualidade do ensino. Os alunos apreciam professores que estruturam as aulas de forma lógica, utilizando métodos de ensino adequados e disponibilizando materiais e orientações que facilitam a compreensão e aplicação dos conteúdos. Quando os docentes comunicam os objetivos de aprendizagem de forma clara e promovem um ensino bem estruturado, os estudantes sentem-se mais confiantes e envolvidos no processo educativo.

Apesar da avaliação global ser positiva, há aspetos que merecem atenção e melhoria. Os alunos referem que nem sempre lhes são fornecidos exemplos concretos de trabalhos bem-executados, manifestam dificuldades em solicitar apoio aos professores e apontam uma participação reduzida em atividades de avaliação entre pares. Estas lacunas sugerem a necessidade de tornar o ensino mais interativo e colaborativo, proporcionando mais oportunidades para os alunos desenvolverem competências de análise e reflexão.

De um modo geral, os estudantes consideram que a eficácia docente está diretamente relacionada com a qualidade do feedback, o incentivo à autoavaliação, a clareza na organização dos conteúdos e a adoção de estratégias pedagógicas que promovam o envolvimento ativo na aprendizagem. Estes fatores são essenciais para melhorar a experiência educativa e contribuir

para um ensino mais centrado no aluno, que valorize tanto o desenvolvimento acadêmico como o crescimento pessoal dos estudantes.

O estudo 4 "A Comparative Study of Teaching Effectiveness from Student to Teacher Perspectives", associado à subquestão: "Quais são as divergências e convergências entre as percepções dos professores e dos alunos sobre a eficácia docente?", analisou as diferenças na percepção da qualidade do ensino entre professores e alunos, evidenciando áreas em que é necessário um maior alinhamento e comunicação. As percepções dos professores e dos alunos sobre a eficácia docente apresentam tanto semelhanças como diferenças significativas. Ambos os grupos reconhecem a importância das estratégias de ensino eficazes, da gestão estruturada da sala de aula e do envolvimento ativo dos alunos no processo de aprendizagem. Professores e alunos concordam que a utilização de métodos diversificados, a explicação dos conteúdos por diferentes abordagens e a promoção do diálogo são aspectos essenciais para um ensino de qualidade. Além disso, há um consenso sobre a importância de um ambiente de aprendizagem bem organizado, com regras claras e conteúdos estruturados, como fator determinante para um melhor desempenho acadêmico. O feedback é outro ponto de convergência, sendo valorizado tanto pelos professores, que reconhecem o seu papel na melhoria do ensino, como pelos alunos, que apreciam receber comentários construtivos sobre o seu progresso.

No entanto, existem divergências nas percepções de cada grupo, sobretudo em relação à motivação dos alunos. Os professores reportam dificuldades em estimular estudantes com baixo interesse e em gerir comportamentos disruptivos, enquanto os alunos avaliam positivamente as oportunidades de participação e o incentivo ao diálogo proporcionados pelos docentes. Este desalinhamento sugere que, apesar dos esforços dos professores, pode haver desafios na adaptação das estratégias motivacionais às necessidades individuais dos alunos. Outra discrepância prende-se com a diferenciação pedagógica. Os professores referem sentir menor confiança na implementação de estratégias diferenciadas para acomodar diversos estilos de aprendizagem, enquanto os alunos tendem a avaliar positivamente a diversidade de métodos utilizados. Isto indica que os docentes podem subestimar a sua própria eficácia na adaptação do ensino às características dos alunos.

Além disso, as percepções sobre a comunicação das expectativas e dos critérios de avaliação também diferem. Os professores acreditam que comunicam claramente as regras e objetivos das avaliações, mas os alunos indicam que a apresentação de exemplos concretos de trabalhos bem-sucedidos nem sempre é suficientemente explícita. Esta diferença sugere que, embora os professores forneçam instruções gerais claras, pode haver necessidade de um reforço na explicação detalhada sobre o que se espera dos estudantes.

Em suma, o estudo demonstra que, embora professores e alunos partilhem uma visão comum sobre os princípios fundamentais do ensino eficaz, existem áreas que necessitam de maior alinhamento, nomeadamente na motivação dos alunos, na diferenciação pedagógica e na clareza das expectativas de avaliação. A implementação de programas de formação contínua para professores, focados em estratégias motivacionais e adaptativas, bem como o reforço da comunicação sobre critérios de desempenho, poderá ajudar a reduzir estas discrepâncias e promover uma experiência educativa mais eficaz e alinhada com as necessidades dos estudantes.

Por fim, o estudo 5 "Desempenho Escolar e Avaliação da Eficácia Docente: Um Estudo Comparativo das percepções de alunos" associado à subquestão: "De que forma o desempenho académico dos alunos influencia a sua perceção sobre a eficácia docente?" explorou a relação entre o desempenho académico dos alunos e a perceção que têm sobre a eficácia dos seus professores, reforçando a necessidade de estratégias inclusivas e diferenciadas para atender a diversos níveis de rendimento. Os resultados mostram que o desempenho académico dos alunos influencia diretamente a perceção que estes têm sobre a eficácia dos seus professores, sendo possível identificar padrões distintos entre grupos com diferentes níveis de rendimento escolar. De acordo com o estudo, os alunos com melhores classificações tendem a avaliar de forma mais positiva a atuação dos professores, reconhecendo a coerência das avaliações com os objetivos de aprendizagem, a adequação das estratégias de ensino e a clareza na comunicação das expectativas e critérios de avaliação. Estes alunos percebem o professor como um facilitador do seu progresso académico, atribuindo o seu sucesso tanto ao esforço pessoal como à qualidade do ensino recebido.

Por outro lado, os alunos com um desempenho mais baixo demonstram uma tendência para avaliar de forma menos positiva a eficácia dos professores, frequentemente associando as suas dificuldades a fatores externos, como o método de ensino ou a estrutura da avaliação. Estes alunos podem sentir que os conteúdos não foram devidamente revistos antes dos testes ou que os critérios de avaliação não foram suficientemente explicados, o que pode contribuir para um menor envolvimento no processo de aprendizagem. Além disso, a forma como interpretam o feedback recebido pode influenciar a sua perceção sobre o professor, sendo que, em alguns casos, a retroação pode ser vista como uma crítica, em vez de um incentivo à melhoria.

As diferenças na perceção da eficácia docente entre alunos de diferentes níveis de rendimento académico refletem não apenas o impacto das práticas pedagógicas, mas também a motivação individual e a forma como cada estudante encara o seu próprio desempenho. Os alunos com melhores notas tendem a assumir maior responsabilidade pelo seu sucesso, vendo o professor como um elemento de suporte, enquanto os alunos com dificuldades podem sentir que a metodologia utilizada não responde adequadamente às suas necessidades. Este cenário reforça a importância de estratégias pedagógicas diferenciadas e inclusivas, que atendam às especificidades de cada grupo e promovam um ensino mais equitativo.

Deste modo, para garantir que todos os alunos percecionam os professores como eficazes, é essencial adotar metodologias mais interativas e ajustadas aos diferentes perfis de aprendizagem, fornecendo feedback claro e contínuo e criando um ambiente onde todos os estudantes se sintam valorizados e apoiados no seu percurso académico.

Assim, procurando responder à questão geral de investigação, "*Quais as principais características da eficácia docente e como é percebida por professores e alunos?*", podemos, com base nos resultados obtidos, apresentar eficácia docente enquanto conceito multifacetado que combina características pessoais dos professores, práticas pedagógicas e a perceção que alunos e docentes têm sobre o ensino. A literatura analisada destaca que professores eficazes possuem um conjunto de competências que influenciam diretamente o desempenho académico dos alunos. Entre as suas principais características, sobressaem a autoeficácia, ou seja, a crença na sua capacidade de ensinar e

impactar positivamente os estudantes (Bandura, 1997; Tschannen-Moran & Hoy, 2001), bem como a experiência e a qualificação, que lhes permitem desenvolver um maior domínio das estratégias pedagógicas (Holzberger et al., 2013; Tschannen-Moran & Hoy, 2001). O conhecimento aprofundado do conteúdo lecionado e uma forte base pedagógica são igualmente fundamentais para garantir um ensino eficaz (Carvalho et al., 2020; Creemers & Kyriakides, 2008).

A nível das práticas instrucionais, a clareza na exposição dos conteúdos, a organização do discurso e a ativação cognitiva, que estimula o pensamento crítico e a ligação entre conceitos, são aspetos essenciais para promover o envolvimento dos alunos (Hattie, 2009; Shulman, 1987). A gestão eficaz da sala de aula, assegurando um ambiente disciplinado e estruturado, favorece também um maior foco e participação ativa dos estudantes no processo de aprendizagem. Além disso, o comportamento e a interação do professor com os alunos desempenham um papel determinante, sendo a empatia, o respeito e o incentivo à autonomia elementos fundamentais para a criação de um ambiente de aprendizagem produtivo e positivo. Professores eficazes são aqueles que acreditam no potencial dos seus alunos e os motivam a atingir níveis elevados de desempenho académico.

A autoeficácia docente, com base no Teachers' Sense of Efficacy Scale (TSES), pode ser analisada em três dimensões principais: a eficácia para o envolvimento dos alunos, que reflete a capacidade do professor para motivar os estudantes; a eficácia na gestão da sala de aula, que se refere à competência para estabelecer regras eficazes e lidar com comportamentos disruptivos; e a eficácia nas estratégias de ensino, que evidencia a confiança dos docentes na sua capacidade de adaptar abordagens didáticas às necessidades dos alunos (Tschannen-Moran & Hoy, 2001). Estas dimensões são consistentes a nível internacional e demonstram que a perceção de autoeficácia dos professores pode ser influenciada pela sua experiência, formação e contexto escolar (Holzberger et al., 2013; Klassen & Tze, 2014; Zee et al., 2016). Além disso, a teoria da autoeficácia de Bandura (1997) sustenta que a confiança dos professores no seu próprio desempenho influencia diretamente a qualidade do ensino e o sucesso dos alunos.

No que diz respeito à perceção dos alunos sobre a eficácia docente, os estudantes valorizam, sobretudo, dois aspetos: a autoavaliação e o feedback do

professor, e a organização e apresentação dos conteúdos (Richardson, 2005). Professores que incentivam a participação ativa, fornecem comentários construtivos e esclarecem os critérios de avaliação são mais apreciados pelos alunos, uma vez que promovem um ambiente de ensino mais motivador e orientado para a aprendizagem (Biggs & Tang, 2011; Hattie & Timperley, 2007). No entanto, os estudantes referem algumas lacunas, como a falta de exemplos concretos de trabalhos bem-executados, dificuldades em solicitar apoio aos docentes e uma reduzida participação em atividades de avaliação entre pares, sugerindo a necessidade de tornar o ensino mais interativo e colaborativo (Zerihun et al., 2012).

A análise comparativa entre as percepções dos professores e dos alunos sobre a eficácia docente evidencia tanto convergências como divergências. Ambos os grupos reconhecem a importância das estratégias de ensino eficazes, da gestão estruturada da sala de aula e do envolvimento dos alunos no processo educativo. No entanto, os professores reportam dificuldades em motivar estudantes menos envolvidos e em gerir comportamentos disruptivos, enquanto os alunos avaliam de forma positiva as oportunidades de participação e o incentivo ao diálogo proporcionados pelos docentes. Outra discrepância prende-se com a diferenciação pedagógica, uma vez que os professores demonstram menor confiança na adaptação de estratégias a diferentes estilos de aprendizagem, ao passo que os alunos percebem essa diferenciação de forma mais favorável.

Adicionalmente, a percepção da eficácia docente varia em função do desempenho académico dos alunos. Estudantes com melhores classificações tendem a avaliar mais positivamente o trabalho dos professores, destacando a coerência entre avaliação e objetivos de aprendizagem, a clareza na comunicação de expectativas e a adequação das estratégias pedagógicas. Em contrapartida, alunos com desempenho mais baixo demonstram uma avaliação menos favorável, frequentemente associando as suas dificuldades a fatores externos, como o método de ensino ou a estrutura da avaliação. Estes estudantes podem sentir que os conteúdos não foram devidamente revistos antes dos testes ou que os critérios de avaliação não foram suficientemente explicados, o que pode contribuir para um menor envolvimento na aprendizagem.

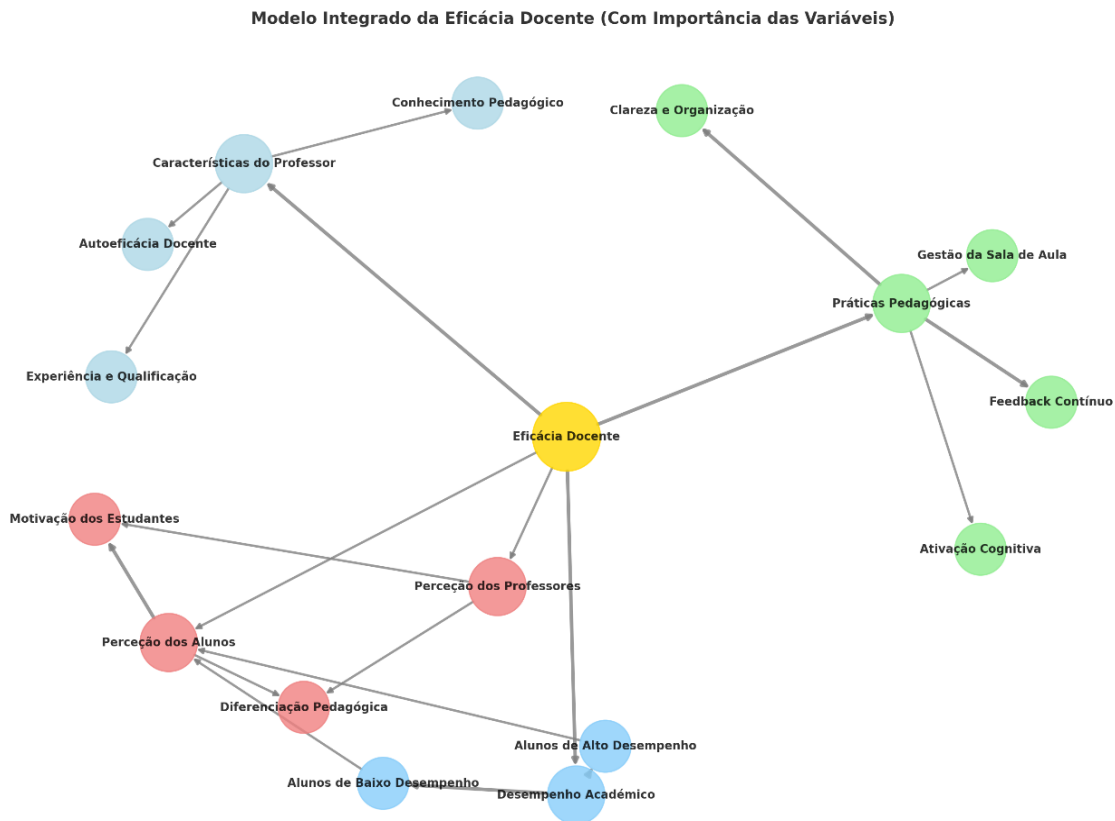
Em suma, a eficácia docente não se limita à experiência e formação dos professores, mas também à sua capacidade de adaptação às necessidades dos alunos, à implementação de práticas pedagógicas eficazes e à criação de um ambiente de ensino estimulante e inclusivo (UNESCO, 2017; Hattie, 2009; Kim et al., 2018). Para que todos os estudantes percecionem os professores como eficazes, é essencial adotar metodologias interativas e ajustadas a diferentes perfis de aprendizagem (Biggs & Tang, 2011; Seidel & Shavelson, 2007), fornecendo feedback contínuo e promovendo um ambiente educativo onde os alunos se sintam valorizados e apoiados no seu percurso académico (Darling-Hammond, 2000).

Com base no exposto é possível construir um *Modelo Integrado da Eficácia Docente* (figura 9). Este modelo evidencia a importância de variáveis relacionadas ao professor, às práticas pedagógicas e à percepção dos alunos e professores, além do impacto no desempenho académico dos estudantes.

O modelo destaca que a eficácia docente é influenciada por uma combinação de competências do professor, estratégias pedagógicas eficazes e a forma como alunos e professores percebem o ensino. A interação entre esses fatores impacta diretamente nos alunos e, conseqüentemente, no seu desempenho académico.

Este modelo pode servir como base para a formulação de estratégias educacionais que promovam um ensino mais eficaz e equitativo, considerando tanto as capacidades do professor quanto a experiência dos alunos no processo de aprendizagem.

Figure 7 Modelo integrado da Eficácia Docente



Recomendações e Implicações para a prática

A melhoria contínua da eficácia docente requer um investimento consistente na formação dos professores, no desenvolvimento de práticas pedagógicas inovadoras e na adoção de estratégias que promovam um ensino mais eficaz e centrado nos alunos. Os resultados desta investigação fornecem contributos significativos para os modelos de avaliação de desempenho docente, permitindo a identificação de práticas eficazes e a definição de critérios objetivos para a sua medição e melhoria contínua.

A formação contínua dos professores surge como um dos principais eixos para a melhoria da qualidade educativa e do desempenho docente. O estudo *"Portuguese version of the Teachers' Sense of Efficacy Scale: Validation Study"* destaca a importância de integrar a formação contínua nos modelos de avaliação de desempenho, garantindo que o crescimento profissional dos docentes seja acompanhado e valorizado. Além disso, o desenvolvimento de indicadores que

meçam o impacto da formação na prática pedagógica poderá tornar os sistemas de avaliação mais eficazes e orientados para a melhoria da qualidade do ensino.

Outro fator essencial identificado na investigação é o feedback na relação professor-aluno, que desempenha um papel determinante na aprendizagem dos estudantes e na percepção da eficácia docente. O estudo *"Portuguese version of the SELTQ"* demonstrou que os alunos consideram o feedback dos professores como uma ferramenta fundamental para o seu progresso académico. Professores que fornecem um retorno claro, específico e construtivo sobre o desempenho dos alunos conseguem aumentar significativamente o envolvimento e a motivação dos estudantes. Assim, os modelos de avaliação de desempenho docente devem incluir métricas que avaliem não apenas a frequência, mas também a qualidade do feedback fornecido aos alunos, incentivando a adoção de práticas de feedback formativo e contínuo.

A implementação de sistemas de avaliação estruturados e integrados é uma estratégia essencial para garantir a melhoria contínua das práticas pedagógicas e assegurar um ensino de qualidade. O estudo *"Desempenho Escolar e Avaliação da Eficácia Docente: Um Estudo Comparativo das percepções de alunos"* evidenciou que modelos de avaliação mais estruturados e consistentes estão associados a um melhor desempenho académico dos alunos. A adoção de avaliações formativas e diagnósticas permite identificar dificuldades precocemente e ajustar as estratégias pedagógicas, tornando o processo de ensino mais responsivo e eficaz. Para integrar estes contributos nos modelos de avaliação de desempenho docente, recomenda-se a utilização de indicadores que avaliem a capacidade dos professores para monitorizar e adaptar as suas práticas com base nos resultados das avaliações dos alunos.

Além disso, os resultados do estudo *"Teaching effectiveness through the lens of students and teachers: a comparative study"* sublinham a importância de utilizar avaliações diversificadas e contínuas para garantir uma percepção mais equilibrada sobre a eficácia docente. Modelos de avaliação que combinem diferentes métodos, como autoavaliações, observações de aula, análise de desempenho dos alunos e inquéritos de satisfação, permitem obter uma visão mais completa do impacto do ensino na aprendizagem. A incorporação destes elementos nos processos de avaliação de desempenho permitirá uma medição

mais holística da eficácia docente, incentivando a adoção de estratégias mais dinâmicas e adaptativas.

Desta forma, conclui-se que a formação contínua dos professores, a valorização do feedback pedagógico e a implementação de sistemas de avaliação estruturados são elementos essenciais para a melhoria da eficácia docente e do sucesso acadêmico dos alunos. A presente investigação reforça a necessidade de integrar estas dimensões nos modelos de avaliação de desempenho docente, garantindo que a eficácia do ensino seja medida de forma abrangente e alinhada com as exigências da educação contemporânea.

Investir nestes fatores permitirá o desenvolvimento de modelos de avaliação mais eficazes, justos e orientados para a melhoria, beneficiando tanto os professores como os alunos no seu percurso educativo. A adoção de abordagens mais dinâmicas e baseadas em evidências contribuirá para um ensino mais inovador, inclusivo e ajustado às necessidades do século XXI, promovendo um sistema educativo mais equitativo e eficaz.

A presente investigação permitiu explorar detalhadamente a influência da eficácia docente no desempenho acadêmico dos alunos, consolidando a ideia de que a qualidade do ensino está diretamente relacionada com a experiência, a formação e as estratégias pedagógicas utilizadas pelos professores. O estudo realizado evidenciou que professores com maior autoeficácia e que adotam práticas pedagógicas inovadoras conseguem promover um ambiente de aprendizagem mais motivador, resultando em melhores resultados acadêmicos dos seus alunos.

Foram discutidas várias dimensões da eficácia docente, incluindo a sua vertente pessoal, que enfatiza a importância da autoeficácia dos professores na motivação dos alunos, as práticas instrucionais que englobam estratégias pedagógicas diferenciadas e a gestão da sala de aula, um fator crucial para a organização e a retenção do conhecimento. A análise dos instrumentos de avaliação, nomeadamente as escalas TSES e SELTQ, demonstrou a importância de uma avaliação contínua e estruturada para medir a perceção da eficácia docente e o seu impacto na aprendizagem.

A investigação também revelou discrepâncias significativas entre a perceção dos professores e a dos alunos sobre a eficácia docente, reforçando a necessidade de maior alinhamento e comunicação entre ambos. Alunos com

melhor desempenho acadêmico tendem a avaliar os professores de forma mais positiva, enquanto estudantes com dificuldades podem perceber a eficácia docente de maneira mais crítica. Isto sugere a importância de estratégias pedagógicas mais inclusivas e de um acompanhamento contínuo dos alunos para garantir um ensino equitativo e acessível a todos.

Além disso, foi destacado que a formação contínua dos professores é um elemento essencial para o aperfeiçoamento das práticas pedagógicas. O investimento no desenvolvimento profissional docente, com enfoque em metodologias inovadoras e estratégias para motivar os alunos, pode contribuir significativamente para a melhoria da qualidade do ensino. O feedback constante na relação professor-aluno foi apontado como uma ferramenta essencial para o aperfeiçoamento da aprendizagem, permitindo ajustes pedagógicos conforme as necessidades dos estudantes.

Por fim, reforçou-se a necessidade de avaliações regulares e integradas como forma de garantir a melhoria contínua do ensino. Métodos de avaliação diversificados e adaptados à realidade dos alunos permitem um acompanhamento mais preciso do progresso acadêmico e fornecem informações valiosas para a adaptação das estratégias docentes.

Dessa forma, conclui-se que a eficácia docente desempenha um papel central no sucesso acadêmico dos alunos e que a sua promoção requer um esforço contínuo de professores, instituições de ensino e políticas educativas. A adoção de práticas pedagógicas mais dinâmicas, a valorização da formação contínua dos docentes e a implementação de mecanismos de avaliação e feedback são elementos essenciais para garantir um ensino de qualidade e equitativo, permitindo que todos os alunos possam atingir o seu máximo potencial.

Limitações e desenvolvimentos futuros

A presente investigação sobre a eficácia docente e a sua percepção por professores e alunos apresenta algumas limitações que devem ser consideradas na interpretação dos resultados. Em primeiro lugar, a maioria dos estudos analisados baseia-se em métodos de avaliação auto-relatados, como escalas de percepção e questionários, o que pode introduzir vieses associados à

subjetividade das respostas. Embora instrumentos como a Teachers' Sense of Efficacy Scale (TSES) e a Student Evaluation of Learning and Teaching Questionnaire (SELTQ) tenham sido validados no contexto português, a utilização exclusiva destes métodos pode limitar a compreensão das relações causais entre as variáveis estudadas. Futuras investigações poderão integrar abordagens mais objetivas, como a observação direta das práticas pedagógicas em sala de aula ou análises longitudinais para avaliar o impacto da eficácia docente ao longo do tempo. Outra limitação relevante prende-se com a amostragem dos participantes. Investigação futura poderá beneficiar da comparação entre diferentes níveis de ensino e contextos educativos, analisando, por exemplo, como a eficácia docente varia entre escolas públicas e privadas ou entre diferentes sistemas educativos.

No que diz respeito à relação entre o desempenho académico dos alunos e a perceção da eficácia dos professores, verifica-se que os estudantes com melhores resultados tendem a avaliar mais positivamente os seus docentes, enquanto os alunos com desempenho mais baixo demonstram uma perceção menos favorável. No entanto, os estudos analisados não exploram em profundidade os fatores subjacentes a esta diferença. A motivação dos alunos, as suas expectativas sobre o ensino e o papel de fatores externos, como o suporte familiar e os recursos disponíveis, são aspetos que merecem uma análise mais aprofundada. Investigação futura poderá considerar abordagens qualitativas, como entrevistas e grupos de discussão focalizada, para compreender melhor as razões por detrás destas perceções diferenciadas.

Outro aspeto que merece atenção é a discrepância entre a perceção dos professores e dos alunos relativamente à eficácia docente. Enquanto os professores enfatizam desafios como a motivação dos estudantes e a gestão da sala de aula, os alunos valorizam aspetos como a organização dos conteúdos e a clareza das explicações. Esta divergência sugere a necessidade de um maior alinhamento entre as expectativas de ambos os grupos. Estudos futuros poderão explorar estratégias para reduzir esta diferença, promovendo, por exemplo, iniciativas de feedback bidirecional, onde alunos e professores possam partilhar perceções e ajustar práticas pedagógicas de forma colaborativa.

Outra limitação deste estudo é a potencial influência da pandemia de COVID-19 nas perceções de autoeficácia dos professores, uma vez que os

dados foram recolhidos durante 2020–2021. A pandemia trouxe desafios sem precedentes para a profissão docente, incluindo transições abruptas para o ensino remoto, aumento da carga de trabalho e níveis elevados de stress. Estes fatores podem ter impacto das estratégias de ensino, na gestão da sala de aula e na capacidade de envolvimento dos alunos com as atividades pedagógicas propostas.

Adicionalmente, o impacto das tecnologias educativas na eficácia docente representa um campo de investigação promissor. Com a crescente digitalização do ensino, o uso de metodologias híbridas e ferramentas interativas pode influenciar a forma como alunos e professores percecionam a qualidade do ensino. Futuras investigações poderão explorar como o uso de plataformas digitais, ensino adaptativo e inteligência artificial pode contribuir para melhorar a eficácia docente e a personalização da aprendizagem.

Por fim, recomenda-se que futuras pesquisas adotem abordagens mais interdisciplinares, combinando conhecimentos das áreas da psicologia educacional, sociologia da educação e ciência dos dados para compreender melhor os fatores que influenciam a eficácia docente. A implementação de estudos experimentais que testem novas práticas pedagógicas e a sua eficácia poderá fornecer evidências mais robustas para a formulação de políticas educativas e programas de formação contínua para professores.

Desta forma, apesar das limitações identificadas, esta investigação contribui significativamente para a compreensão do conceito de eficácia docente e abre caminho para futuros estudos que possam aprofundar e expandir o conhecimento nesta área fundamental para o sucesso educativo.

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