

A Rapid Evidence Assessment of the effectiveness of prison education in reducing recidivism and increasing employment

VERSION RE-SUBMITTED AFTER PEER REVIEW

Mark Ellison (Manchester Metropolitan University)

Kirstine Szifris (Manchester Metropolitan University) (Corresponding author)

Rachel Horan (Manchester Metropolitan University)

Chris Fox (Manchester Metropolitan University)

Abstract

This is a Rapid Evidence Assessment (REA) of educational programmes delivered within prison. Included in this review are evaluations of vocational, academic, basic skills, accredited and unaccredited educational provision in prison where recidivism and/or employment were measured as outcomes. Initial searches returned 4,304 titles and abstracts. Of these, 28 papers met the criteria for inclusion. Only 18 papers provided sufficient information and robust enough research design to be included in the meta-analysis. Meta-analysis on 18 reoffending studies identified that delivering education in prison settings has a positive impact on recidivism. Overall, the pooled odds ratio indicates a reduction in the *likelihood* of recidivating of approximately one third (0.64=64%~2/3). Meta-analysis on five employment studies identified that education in prison settings has a positive impact on employment. Overall, odds ratios indicated a 24 percent increase in likelihood of gaining employment if the prisoner engages in prison education. However, this is based on a small number of papers with statistical findings being less robust and evidence drawn largely from the USA.

1. INTRODUCTION

The purpose of this Rapid Evidence Assessment (REA) is to review evidence on the link between education in prison and post-release outcomes. The review focuses on employment and recidivism as desirable outcomes of engaging in prison education. It was commissioned by Novus (part of the Manchester College Group).

REAs are appraisals of existing evidence that sit somewhere between the equivalent of Health Technology Assessments (HTAs) and fully developed systematic reviews in the field of health care (Government Social Research Unit, 2007). They follow a similar process to systematic reviews and involve; collating descriptive outlines of the available evidence on a topic; devising structured search terms used to identify relevant research studies held in electronic bibliographic databases and other sources; critically appraising the studies identified; sifting out studies deemed to be of poor quality; and, providing an overview of what that evidence tells us and what is missing from it. One aim of an REA is to highlight relevant evidence to service providers and establishments regarding, in the case, the contribution of education to recidivism and post-release employment, in such a way that they can use the research to develop evidence-led policy. REAs can be completed in approximately three months as opposed to between six months and a year for a full systematic review. The main advantages of an REA are to provide a structured, transparent and replicable search of the literature that takes account of the methodological rigour of available studies when summarizing the available

evidence in a reasonably timely manner. However, the trade-offs include the potential loss of some relevant studies, particularly unpublished ones.

All papers included in this report discuss prison education and its impact on rates of recidivism and employment. The nature and types of education that are discussed vary with the majority of studies failing to provide information around the specifics types of courses. Nearly all of the papers are from the United States with only one coming from the UK. This means most papers discuss either basic education, GED (General Education Diploma) qualifications or ‘post-secondary’ education without providing details of subject content, delivery, or duration. There are some exceptions to this, most notably Dugiud and Pawson’s (1998) work around liberal arts education in Canadian prisons provides details around the educational content. However, this level of detail was not replicated elsewhere. Most of the studies also do not provide information regarding race, gender, sentence length, or criminal conviction of the participants.

This report provides background information regarding the role of education in prisons and the current policy climate in the UK. Section 3 describes how the reviewers have interpreted the terms ‘prison education’ and defined the research questions. Section 4 provides an account of how papers were selected for inclusion and the methods of data extraction used. Section 5 presents two sets of findings. The first set is a descriptive account of the 28 papers that relate to the link between education in prison and post-release outcomes. The second set focuses on the 18 papers that were found to be suitable for a meta-analysis. The report concludes with a discussion of the key findings.

2. BACKGROUND FOR THE REVIEW

Recent and current policy

All prisons in England and Wales provide education. Over the last 15 years, the focus of policy has been on improving the literacy and numeracy rates of prisoners. This focus can be traced back to the findings of the 2002 report by the Social Exclusion Unit on how to cut re-offending rates. The Report outlined nine key factors in re-offending with education and employment being top of the list, alongside physical and mental health, family networks, housing, and drug and alcohol misuse. The Report found that many prisoners’ basic skills were poor with 80 percent having the writing skills, 65 percent the numeracy skills, and 50 percent the reading skills at or below the level of an 11 year old child (Social Exclusion Unit, 2002). These figures were attributed to a Home Office statistical release but in recent years, scholars have questioned their accuracy (see for example Nichols, 2016). In the years since, a variety of reviews and government reports re-emphasized the role of education in prisons (see for example, Education and Skills Committee, 2005).

The years 2015-16 have seen a renewed focus on prisons as a place of reform. In September 2015, Michael Gove, the then (2015), Secretary of State for Justice, announced a review of education in adult prisons whilst his successor, Elizabeth Truss, published a White Paper on Prison Reform in November 2016. Gove’s commissioned review was led by Dame Sally Coates and its recommendations were far-reaching and ambitious. If followed, they would constitute a fundamental shift in the way education works in prisons in England and Wales. In particular, Coates recommended that Prison Governors have responsibility for commissioning and delivering education and they be held accountable for outcomes through publication of prison league tables.

Coates also pointed to a huge drop in those studying Level 3 (AS / A level) and Open University qualifications and cites the restrictions placed by Ministry of Justice (MoJ) on such studies as the reason. She recommended a core prison curriculum including English, Maths and ICT delivered to Level 3 and above. Coates highlighted the need to tailor education towards employment and the role of local and national employers to help shape vocational education in prisons.

The Government White Paper on Prison Safety and Reform (2016) indicates that the Ministry of Justice will seek to incorporate these recommendations into an overall change in emphasis in the role of prisons. The White Paper states that prisons are, first and foremost, a place that “exist to deprive people of their liberty and so punish them for crimes” (p.20). The White Paper goes on to outline four further purposes of prison. These are public protection, to maintain safety and order, to reform offenders (as a means of preventing offenders from committing more crimes), and to prepare prisoners for release. Should the White Paper progress through parliament successfully, it will be against these standards that prison governors and staff are measured.

In the White Paper, education comes under ‘reform’ and the government will seek to use measures of progress in English and maths to track the ‘distance travelled’ by prisoners during their time in custody. Further to this, they will also look at the number of qualifications and employment focussed accredited courses they have undertaken and achieved during custody. Unfortunately, this could potentially miss the point of education. Looking at the number of qualifications obtained whilst in prison will encourage providers to deliver low level, short-term education courses that could end up being a ‘tick-box’ exercise (something the White Paper explicitly states they wish to move away from).

It seems education will be seen as part of a pantheon of interventions available to prisoners. The White Paper briefly mentions the streamlining of interventions under a case management system whereby interventions can be delivered in a suitable order to work with each other rather than compete to recruit people. It explicitly states which aspects of the Coates Review they will enact. First, governors will be made fully responsible for commissioning education in their prisons (rolled out once current contracts end during the course of the 2017-2018 financial year). Second, all prisoners’ learning needs will be assessed upon entry to the prison in order to develop a personalised learning plan (processes similar to this are already in place and this does not constitute a fundamental change to procedure). Third, a core common curriculum will be developed with English and maths at the heart of it to ensure that prisoners can pick up their educational progress when they move around the estate. Finally, they will encourage governors to work with local organisations to ensure the educational provision is tailored to the needs of the workforce and for education providers to develop ‘through the gate’ skills such as interviewing techniques.

Having recounted the current policy climate, this review of extant literature provides a timely update to the discussion of what is known about the relationship between engaging in prison education and post-release outcomes and its required placement within a broader programme of necessary prison reform.

Educational and employment backgrounds of prisoners and links with re-offending

Data regarding the educational needs of the prison population are complex and varying. This section provides an overview of recent reports of the educational levels and employment histories of prisoners in England and Wales.

The Surveying Prisoner Crime Reduction (SPCR) was a longitudinal cohort study of 1,457 adult prisoners sentenced to between one month and four years in custody in the UK in 2005/06 (Ministry of Justice, 2014). The survey found that around a third of prisoners (32%) reported being in paid employment in the four weeks prior to custody and 51 percent reported being in paid employment during the 12 months prior to custody (Brunton-Smith & Hopkins, 2014). Both of these figures are considerably lower than the UK general employment rate, which was 75 percent in 2006 for those of working age (Ministry of Justice, 2010). Further to this, many prisoners reported needing help finding a job on release (48%), with education (41%), and to improve work-related skills (40%), and agreed that having a job would help them stop reoffending (68%) (Hopkins, 2012). A lower likelihood of reconviction has been associated with having been employed in the year before custody (40% compared with 65% not in employment) and having a qualification prior to custody (45% compared with 60% for those who did not have a qualification) whilst a higher rate of reconviction is associated with having been in receipt of benefits in the year before custody (58% compared with 42% for those not in receipt of benefits) (Hopkins, 2012).

The most comprehensive and up-to-date study of the educational levels of prisoners found by the reviewers comes from the Centre for Education (CfE) in the Criminal Justice System at the University of Central London. Creese (2015) produced a report of the literacy and numeracy levels of prisoners in England and Wales that employed data from the prison education providers as opposed to using MoJ data. In prisons in England and Wales, educational providers are required to conduct initial assessments of the English and maths needs for all prisoners entering the estate (unless they have been tested in the 6-months prior to prevent repeat testing). The study used data from four educational providers comparing the levels of literacy and numeracy in various prisons to the national levels (as measured by the Skills for Life national survey conducted by BIS in 2012). Their figures show that 85 percent of the general population have literacy skills at Level 1 or Level 2 compared to only 50 percent of prisoners. Their findings regarding numeracy however are very different. Up to, and including, level 1, prisoners out-perform national statistics with 79.4 percent of prisoners having Entry Level 3 numeracy skills and above, compared to 76.4 percent of the general population. It should be noted that this gap is much larger at Entry Level 3 where prisoners outperform the national average consistently. However, at Level 2, only 9 percent of prisoners are recorded as having achieved level 2 numeracy whilst 21.8 percent of the general population have.

These studies demonstrate that statistics regarding the educational levels of prisoners vary. However, there is general agreement that prisoners are, on average, less well qualified, less skilled and often come from difficult and confused educational backgrounds.

Previous reviews of the evidence

The Ministry of Justice describes evidence on the effectiveness of employment/education programmes in reducing re-offending as ‘mixed/promising’ (Ministry of Justice, 2013). A number of systematic reviews have examined the impact of employment and/or education programmes on re-offending and/or employment. These include: Pearson and Lipton (1999); Bouffard *et al.* (2000); Wilson *et al.* (2000); and Visher *et al.* (2005). Reviews we have identified undertaken in the last ten years are as follows:

- MacKenzie (2006) updated a meta-analysis originally conducted by Wilson *et al.* (2000). Meta-analysis found that the odds of recidivating were 16 percent lower among academic education programme participants than non-participants. The meta-analysis also showed that vocational programme participation was associated with a reduction in recidivism with the odds of recidivating 24 percent lower among vocational program participants than non-participants.
- Aos *et al.* (2006) conducted a large meta-analysis of 291 evaluations of offender rehabilitation programmes for adults. They limited their sample to studies conducted from 1970 onward and included only studies that received at least a Level 3 rating on the Scientific Methods Scale. They identified seven evaluations of basic adult education programs in prison and meta-analysis showed a 5.1 percent reduction in recidivism. They also identified three studies of vocational education in prison showing a 12.6 percent reduction in recidivism.
- Hurry *et al.* (2006) undertook an REA that drew together empirical evidence about interventions that focussed on promoting employment for offenders. They identified 53 studies covering a range of interventions including education, vocational training and prison work. The majority came from the US and only nine were from the UK. Prison work and vocational training were identified as effective. Education does not emerge as having an impact on employment but Hurry *et al.* note that the evidence base is too small to draw firm conclusions and state that the effectiveness of education is “still an open question” (p. 9). They also note that there is very little description of what ‘education’ involves in the studies they reviewed.
- Jenson and Reed (2008) reviewed six studies of correctional education on recidivism, several of which are themselves meta-analyses. They make use of the Scientific Methods Scale (Sherman *et al.*, 1998) including only those that are at Level 3 and above. Five out of six studies considering high school and GED education indicate education is effective at reducing recidivism including the three most methodologically rigorous. The conclusions for vocational education are less firm; although there is indication of reduced recidivism, the studies were less methodologically rigorous. College programming is demonstrated to have a significant effect on recidivism and is deemed to be part of the ‘what works’ programming. Life-skills programming is categorised as ‘what is unknown’.
- Davis *et al.* (2013) undertook a systematic review and meta-analysis of programmes that provide education to incarcerated adults. They included studies (published and unpublished) completed between 1980 and 2011 that examined the relationship between correctional education participation and prisoner outcomes in the United States. Prison education was defined as academic and vocational training programs and thus excluded life skills training/re-entry programs and work placement programs. 58 studies were identified. Meta-analysis supported the hypothesis that receiving correctional education while incarcerated reduces an individual’s risk of recidivating after release. Analysis restricted to higher-quality research studies found that, on average, prisoners who participated in prison education programs had 43 percent lower odds of recidivating than prisoners who did not.

These results were consistent even when lower-quality studies were included in the analysis. High school/general education development (GED) programmes were the most common approach to educating prisoners in the studies Davis et al. examined. They found that prisoners who participated in high school/GED programs had 30 percent lower odds of recidivating than those who had not. In general, studies that included adult basic education (ABE), high school/GED, postsecondary education, and/or vocational training programs showed a reduction in recidivism. The meta-analysis also found that the odds of obtaining employment post release among prisoners who participated in education (either academic or vocational programs) was 13 percent higher than the odds for those who had not participated. However, only one study fell into the higher-quality category. Individuals who participated in vocational training programs had odds of obtaining post-release employment that were 28 percent higher than individuals who had not participated. In comparison, individuals who participated in academic programs had only 8 percent higher odds of obtaining post-release employment than those individuals who had not participated in academic programs. However, there was no statistically significant difference between the odds ratios for the two types of programs, because the number of vocational training studies was relatively small.

- Hall (2015) conducted an ‘assessment’ of the association between correctional education programming and recidivism. She reviewed 10 research studies between 1995 and 2010 based on two key criteria: that the article contained a primary empirical study of an accredited educational course and that the study used recidivism as the outcome measure. She makes a strong conclusion stating that education does work as a “reduction tool for recidivism” (p. 24) and that this is true for all forms of correctional education. However, she argues that high-level education including degrees is particularly effective at reducing recidivism.

A review of previous meta-analyses highlights the varied quality of research with few studies being able to assert a confident causal connection between education and recidivism or post-release employment rates. However, these previous meta-analyses do indicate a general positive impact of education in prison. On the whole, research indicates that education reduces recidivism and increases employability. With respect to employment, there is some evidence that there is an impact. However, studies of employment are less common and the evidence less robust. Measuring employment post-incarceration is complex and the lack of research found reflects this.

Many of the identified reviews are now dated with most having been undertaken in or before 2006. Of the two more recent studies, one is not a systematic review (Hall, 2015) and the other only includes studies from the US (Davis *et al.*, 2013). The current REA adds to the list above by providing a more up-to-date review of literature and provides an opportunity to identify any recent UK studies that might be included in such a review.

3. THE REVIEW

This section provides an overview of the aims of the review, the characteristics of the included studies, and the methods used for searching and sifting through available papers. Here, we provide a detailed account of the inclusion criteria and the types of studies deemed relevant to the meta-analysis.

Research questions

The primary research question was:

1. What impact does education in prison have on rates of recidivism and employment?

To investigate this further we addressed the following questions:

2. What research is currently in existence around the link between education in prison and recidivism/employment?
3. Is there a distinction between outcomes for different measures of recidivism/employment?
4. Does the level of education impact the outcome of engaging?

Characteristics of the studies relevant to the objectives of the review

To address the research questions identified for this REA, we searched for reports of studies which evaluated the effect on re-offending and post release employment of educational and vocational training interventions delivered in a custodial setting to adult prisoners.¹

We based our definition of ‘education and vocational training delivered in a custodial setting’ on the definition developed by Davis *et al.* (2013). We define an educational or vocational programme as one that includes a basic skills (e.g. literacy, numeracy, language or ICT), academic or vocational curriculum taught by an instructor and designed to lead to the attainment of a certificate, license, degree or other academic or vocational qualification widely recognized in the country that the programme is delivered in. Educational programmes could be delivered either face-to-face or at distance (i.e. through an on-line learning environment) or by a mix of the two. Studies were excluded if they:

- were not published in the English language;
- were published in or before 1994;
- did not evaluate the impact or outcomes of education or vocational training delivered in a custodial sentence.
- did not explicitly address an academic or vocational skill (for example drug rehabilitation or anger management programmes were excluded).
- were prison work programs or job placement programs lacking a structured training component under the supervision of an instructor.
- were not administered partly in a custodial setting.
- did not have recidivism or employment as the focus the stated outcome of interest in the study;

¹ We initially stated explicit criteria as being for ‘over-18s’. However the lack of detail and specifics regarding the definition of an ‘adult’ in the majority of studies meant it was necessary to alter our criteria, sifting out only those who specifically focus on under 18s.

- explicitly concerned offenders under 19 years old. In cases of mixed populations, i.e. non-offenders and offenders or under 19s as well as over 19s, the researchers had to be confident that the majority of the sample was comprised of the target group.

Search strategy

We used four methods to identify studies:

- searches of electronic databases using key words;
- bibliographic searching of key systematic reviews;
- hand searching key journals;
- internet searches of key websites likely to contain relevant 'grey literature'.

Specific terms were used to systematically search electronic databases. These were

(prison* OR correctional OR Probation) AND (educat* OR Vocation* OR skills*) AND NOT
 “correctional nurse” OR NOT “correctional nursing”

The following electronic databases were searched:

- British Education Index;
- Web of Knowledge (Social Science Citation Index);
- ASSIA;
- ERIC;
- PsycINFO;
- National Criminal Justice Reference Service Abstracts;
- ProQuest criminal justice YES [might be same as ASSIA?];
- C2-SPECTR (Campbell Collaboration);
- Education Abstracts [returns the same as British Education Index]; and
- Criminal Justice Abstracts.

Due to the time constraints of the project, we limited the number of journals searched by hand to six, chosen because they were thought likely to publish relevant studies. Where electronic versions were available, searches were from 1994 to the end of 2015. The journals hand-searched were:

- Journal of Offender Rehabilitation
- Prison Service Journal
- The Prison Journal
- The Probation Journal
- Journal of Correctional Education
- Correction Review

An Internet search of key UK and US websites including both relevant government departments and large NGOs was undertaken between December 2015 and January 2016 (details available from authors).

Process for identifying studies for inclusion

From the initial bibliographic database key word searches 4,304 studies were identified. Their titles and abstracts were reviewed by one of two reviewers to ascertain whether they were an evaluation of a relevant intervention (as defined above). Each reviewer checked approximately one quarter of the other reviewer’s work to check for inter-rater reliability. At the end of this process 184 studies were categorised as ‘meeting’ or ‘partially meeting’ the intervention criteria. Two different reviewers then reviewed these titles and abstracts bringing the list down to 29 papers that clearly met the inclusion criteria and 59 that partially met the criteria. These 59 papers were then retrieved in full and reviewed more closely and five were included in the ‘met’ category. Five papers could not be retrieved and were therefore excluded from this study. From these searches, there were now 35 studies included as meeting the inclusion criteria. Grey literature searches revealed a further seven studies taking the total to 42 studies. The review of key systematic reviews revealed a further 38 relevant studies. Six of these were excluded during a review of titles and abstracts and 15 could not be retrieved. (Most studies not retrieved were ‘grey’ literature studies that could not be located due to the references provided being websites that are no longer available.) A further six did not match our criteria. In total, a further 11 studies were added from reviewing other systematic reviews, the majority of which were grey literature. This meant the total number of papers identified from abstracts was 53.

Following a more detailed review of each of these papers, a further ten papers were excluded. Of those excluded, two were first authored by Duguid and excluded because, in the sample of 28 studies, three studies were authored or co-authored by Duguid (Duguid, 1997; Duguid & Pawson, 1998 and Duguid *et al.*, 1998) and all related to the same set of findings. As such, only one of these studies has been included in the meta-analysis. A further six studies were excluded because the evaluation framework they employed provided insufficient methodological rigour. We only included studies that employed an evaluation design that could be characterised as Level 2 or above the Scientific Methods Scale (Sherman *et al.*, 1998) as modified for reconviction studies by Harper and Chitty (2005) (see Figure 1). This is a slightly lower benchmark than many of the systematic reviews discussed above. This was to allow for the possibility of more UK studies meeting the inclusion criteria. Two papers were excluded because, from the data presented, the research design was not clear.

Level 5:	Random assignment of offenders to the intervention and control conditions (Randomised Control Trial)
Level 4:	Comparison group matched to intervention group on theoretically relevant factors e.g. risk of reconviction (well-matched comparison group)
Level 3:	Comparison group present without demonstrated comparability to intervention group (unmatched comparison group)
Level 2	Expected reconviction rates* (or predicted rates) compared to actual reconviction rates for intervention group (risk predictor with no comparison group)
Level 1	A relationship between intervention and reconviction outcome (intervention group with

	no comparison group)
--	----------------------

* Expected reconviction rates can be generated using the Offender Group Reconviction Scale-Revised (OGRSR)

Figure 1: Scientific Methods Scale adapted for reconviction studies (Table 1.2 in Harper and Chitty 2005)²

All of these papers were added to the data capture template for a more in-depth review. At this stage, 15 were excluded as closer inspection revealed they did not meet the criteria; six were themselves a review of previous literature and have been included in the review of previous meta-analyses above; and four could not be located. As such, the total number of studies included in this review is 28.

4. DATA COLLECTION AND ANALYSIS

Having reduced the number of suitable studies to 28, these papers were subject to closer scrutiny. The reviewers conducted the analysis in two stages: descriptive analysis and statistical analysis. A descriptive analysis of all 28 studies provided an overview of the nature of the studies, the methodologies most often used, and the methods of operationalising the two outcomes of interest (recidivism and employment). Of the 28 studies, only 18 provided sufficient information for statistical analysis. These papers were included in the second stage of analysis that involved a quantitative analysis of the data provided in these studies using meta-analytic techniques. This section describes the 28 papers included in the broader review and of the methods used in this stage of the REA process.

Descriptive findings (28 papers)

The type of education evaluated by the studies reviewed varied considerably. This section provides an overview of the papers included in this review. The purpose is to describe the type of education the studies relate to, the methods of analysis they employed, the jurisdictions to which they relate, and the ways in which they measured the outcomes of recidivism and employment. The included studies pertained particularly to adult education. However, many did not specify the age of the prisoners in their study and instead stated ‘prisoners’ or ‘adults’ and supplied a mean age. Three studies included only male offenders, one study included only females, ten did not specify the gender of the participants and the remaining papers included both male and female prisoners.

As nearly all of the studies included are from North America, many considered the impact of Adult Basic Education (ABE), General Education Diploma (GED) attainment, post-secondary education and/or vocational education. In the UK ABE is equivalent to basic skills (literacy and numeracy) whilst GED attainment is sufficient to gain a college placement and is (broadly) equivalent to degree-entry qualifications (such as A-Levels). Post-secondary education refers to degree-level qualifications. Of the 28 papers reviewed, 16 focused on a single type of education whilst nine covered a range of educational levels. Three studies were unclear about the nature of the education they were evaluating. Of the 16 that focused on a single type of education, 10 focused on post-secondary, or degree-level, qualifications and three on GED preparation or achievement. Only one study focused on basic skills education and two on vocational education. The nine

² Harper, G. and Chitty, C. (2005) ‘The Impact of corrections on re-offending: a review of ‘what works’’, *Home Office Research Study 291*, London: Home Office

studies that covered a range of qualifications included a combination of ABE, GED, Post-secondary and vocational qualifications. In total, four included basic skills, eight GED, three post-secondary and six vocational education. In general, the studies included in this review were poor in providing information regarding the nature and content of the education delivered. None of the studies discussed the number of people on the course or how the course was delivered. Cronin (2011) and the three studies by Duguid and colleagues (Duguid, 1997; Duguid & Pawson, 1998 and Duguid *et al.*, 1998) specified that college or university faculty members as opposed to teachers in the prison delivered the educational courses and the Batuik (1997) study specified on-the-job training.

In general, there were two types of quantitative investigation into the impact of prison education on post-release outcomes. Here, we have categorised studies as involving a ‘general’ investigation or a ‘specific’ investigation. ‘General’ investigations (15/28) took the form of looking at a cohort of released prisoners from a particular place (usually a state in the USA), categorising them as educational ‘participants’ and educational ‘non-participants’ and then comparing the recidivism/employment rates. Second, there were ‘specific’ investigations (11/28) that focused on a particular programme, or set of programmes, run in one or more prisons. The final two studies took a different form with one comparing outcomes of two education departments to state-wide recidivism rates and the other being a report of an earlier paper. Attempts were made to source the original paper, however, we were unable to locate and, as such, chose to include the summary report.

The designs of the studies also varied. The majority (14 studies out of 28) had a non-random control vs. treatment design. Many of these (eight studies out of 28) looked at the ‘general’ impact of prison education. For example, the Batiuk *et al.* (2005) report looked at all prisoner released in the state of Ohio, USA, released between 1989 and 1992. The researchers then compared the recidivism rates of those who had engaged in prison education compared to those who had not. Other studies (four studies out of 28) used a ‘matched’ control group where the intervention group were compared to a control group that were matched on a range of criteria (such as age or sentence length). Three studies compared the recidivism rates of prison education participants to their expected or predicted recidivism rates. Two studies used survival analysis as part of their method which involved tracking a cohort of prison education participants and measuring how many ‘survive’ without returning to prison within a given time period. None of the studies employed randomisation as part of their study design. Due to the complexities inherent to the study of offender learning in prison, there is limited opportunity to conduct randomised control trials (RCT) in a prison setting (Pettus-Davis *et al.*, 2015). RCT levels of study of offender learning in prison are infrequent as a result.

Nearly all of the studies included in this review were from the United States of America (23 studies out of 28). One was from Canada, one from Australia and one from the UK. The single UK study to meet the inclusion criteria was a report commissioned by the Prison Education Trust from the Justice Data Lab (Ministry of Justice, 2015). As such, the findings from this REA are most relevant to the US context. There are several potential explanations for this US bias. In the UK, the focus of many studies has been on the ‘deficits’ of offenders thereby providing evidence for the need for education among prisoners rather than evaluations of the efficacy of prison education. Two events in the US might have encouraged a greater focus on evaluation. First the 1974 Martinson report famously concluded that ‘nothing works’ in prison reform. After this point, a host of academics engaged in research in an attempt to demonstrate that this was not true. The other event mentioned regularly throughout the papers reviewed here, is the removal of PELL grants for US prisoners in 1994. These

were grants for poorer students for college level education in the United States. In 1994, the Violent Crime and Control and Law Enforcement Act revoked Pell Grant funding for any individual incarcerated (Spearlt, 2016). Several of the papers in this study pertain to 'post-secondary' (what in the UK we would call higher education) programmes in US prisons. Arguably, these papers were a reaction to the revocation of PELL grants with universities attempting to demonstrate the impact of this type of programming as a means of securing funding for prison-college courses.

The data collection and follow up periods of each of the studies varied. Several of the 28 studies under discussion here were based on studies that commenced in the 1970s and 1980s, although they were published in the timeframe. Out of the 28 studies reviewed, the participants of 12 studies were released from prison, or engaged in education whilst in prison, in or before 1995. Furthermore, there was variation in follow-up periods employed in the studies. Studies looked at recidivism rates after only one year (including the Justice Data Lab report from the UK – Ministry of Justice 2015) whilst another followed participants for 13.5 years. The most common follow up period (12/28) was 3 years. However, four were unclear what the follow-up period was whilst some studies varied the follow-up periods for the participants. For example, some studies stated that they followed participants for 'up to' 5 years, or a 'maximum' of 60 months. This made comparison of findings across studies difficult.

Finally, operationalisation of the outcomes of interest also varied. Across studies, recidivism was measured in various ways; six studies used re-arrest, 16 measured re-incarceration, and four used reconviction (of a new crime). Furthermore, five were unclear on their measure of recidivism whilst four used other measures of recidivism including parole violation. Seven of the studies measured employment as an outcome. However, the variety of methods of measuring employment across such a small number of studies demonstrates the complexity of using employment as an outcome. Some studies (3/28) looked at wages earned (measured differently in each study; hourly, monthly and quarterly). One considered employment as being a minimum of 30 hours per week whilst another looked for verification from a parole officer to confirm employment. Two examined a range of factors including type of work, hourly wages and total hours worked.

The information presented demonstrates the varied nature of prison education evaluation. Despite several other meta-analyses and reviews of literature coming before this one, such variation raised questions regarding the suitability of meta-analytic techniques in this field. We also reflected on whether further criteria should be applied (such as the time of the participants' prison education experience). However, we chose to include all 18 studies (those of the 28 with sufficient information for inclusion) regardless of the follow-up period or time of the participant's actual prison education experience. There were two key reasons for this decision. First, having a 'cut off' date for engaging in education (as opposed to publication date) would go against the normative processes of meta-analysis and complicate the inclusion/exclusion criteria. Second, the original developers of the odds ratio method for meta-analysis employed the technique to retrospectively analyse the link between a behaviour and a disease (e.g. lung cancer and smoking). In Mantel and Haentszl's (1959) original paper the example retrospectively analyses the likelihood of contracting lung cancer whether a person has smoked, or not smoked, and, if the odds are sufficiently different then the statistics indicate a relationship. In their process, the relationship holds regardless of how long a person smoked for, how many cigarettes they smoked a day, how long ago they stopped and, importantly, if they develop lung cancer in the future. Some of the people maybe in their 40s and others in their 70s. Still, the relationship holds. Applying this

logic to the work here, odds ratios are applicable because they provide evidence of a relationship regardless of how long prisoners were in education, how much education they had, how long ago they came out of prison and irrespective of if they will recidivate in the future. As such, inclusion of papers with such varying measures was deemed appropriate for this method.

Meta-analysis

As noted above measures of recidivism and unemployment and follow-up periods varied between studies. However, in line with previous reviews (Davis *et al.*, 2013 and Hurry *et al.*, 2006) we combined the different measures in the 18 studies suitable for meta-analysis into single measures of recidivism and employment. To understand the relationship between prison education and recidivism, each study effect size was calculated using the odds ratio. Calculations were cross-validated using an on-line odds ratio calculator (https://www.medcalc.org/calc/odds_ratio.php) and the Metafor package in R, (Viechtbauer, 2010) which was also used to calculate the pooled effect and produce image files of the Forest Plots.

Figure 2 presents a forest plot of the odds ratio and 95 percent confidence interval for each study. The black square point represents the effect size estimate for each study using the odds ratio. The ‘whiskers’ (thin black lines) represent the 95 percent confidence intervals which tells us the range of values between which we can be 95 percent confident that the value actually lies. Therefore, the smaller the ‘whiskers’ the more confident we can be that the findings are a true reflection of impact. The plot illustrates that all studies favour education, meaning delivering education in prison settings have a positive impact of recidivism when compared to the outcomes of a comparison or control group. All studies examined demonstrated this effect; however, two studies Batuik (2005) and Burke (2001) have confidence intervals that cross the line of nil effect. This means that two studies show that education participation *could* have a negative effect on recidivism. The pooled Odds Ratio effect (diamond) is 0.64 (confidence interval between 0.62 and 0.67). This is an overall positive effect of education on recidivism. Importantly, the confidence interval for this is very narrow and does not cross the line of nil effect so we can be confident that the true impact of education on recidivism is close to that which has been found here.

We also tested whether there was a statistical difference between odds ratios based on different educational levels. Several studies indicated that the higher the level of education the greater the impact on recidivism. For example, Wilkinson and Stickrath’s (1995) study indicates that completion of higher-level qualifications such as college-level degrees results in lower recidivism rates than achieving qualifications in lower levels. However, they failed to supply n-values for the control groups to allow for inclusion of this study in this analysis. Therefore, statistical analysis regarding educational levels is inconclusive with further investigation required.

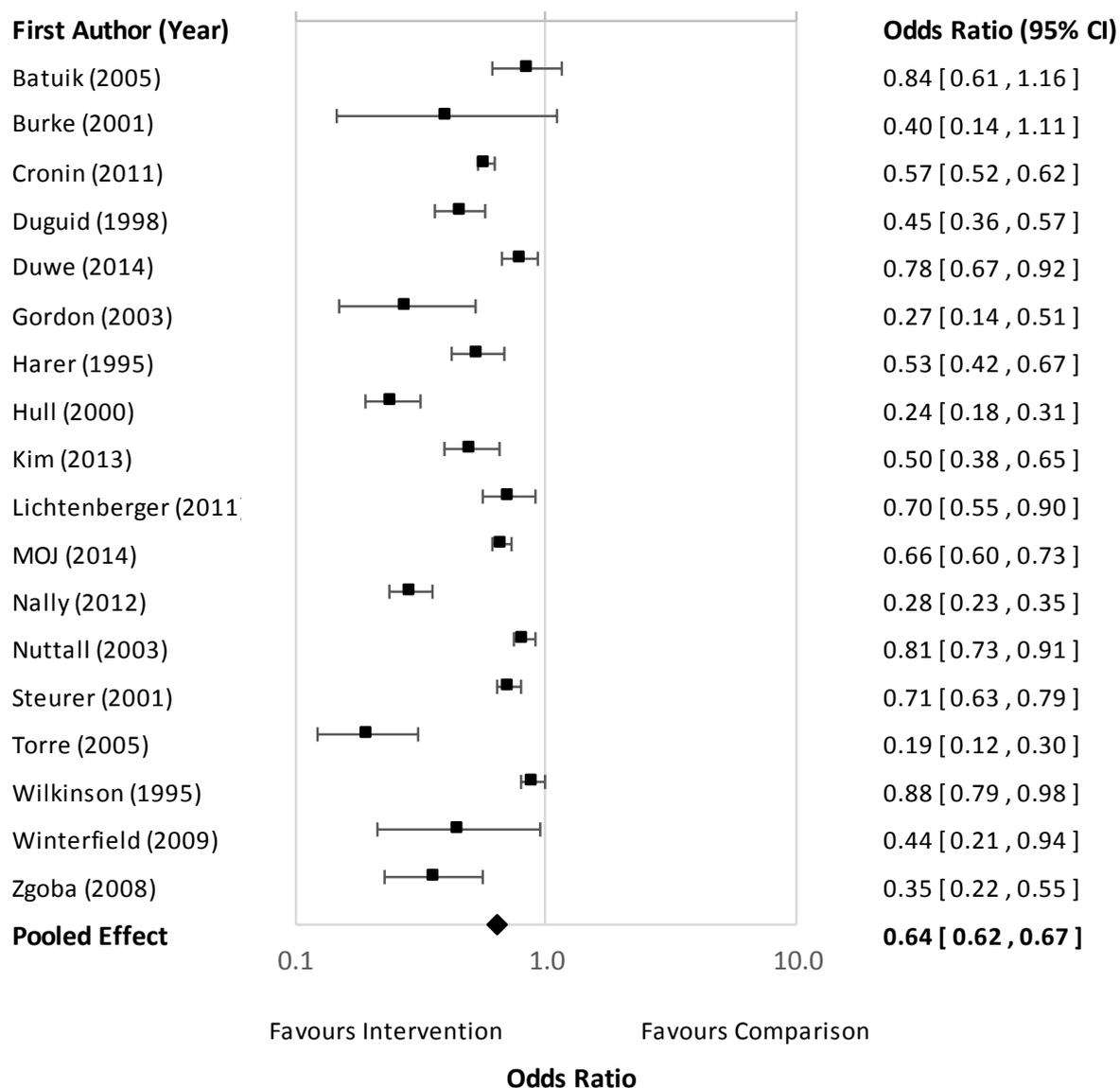


Figure 2 Forest Plot of the Odds Ratio for each of the 18 recidivism studies

From the 18 studies identified for the recidivism meta-analysis, there are five studies, which have examined the effect of prison education interventions on employment outcomes. The Forest Plot (Figure 3) illustrates the odds ratio for each study. As the desired outcome is an *increase* in employment (as opposed to a *decrease* in recidivism) the box and whiskers that sit to the right of the line show a positive effect of education. The overall Pooled Effect of prison education on employment outcomes is positive with a pooled odds ratio of 1.24 (confidence intervals between 1.16 and 1.31). However, the overall finding masks some complexity. The first three studies depicted in Figure 3 (Cronin, 2011; Duwe and Clarke 2014, and Hull *et al.*, 2000) show a positive effect of education on employment outcomes. The final two studies (Nally *et al.*, 2011 and Steurer *et al.*, 2001) show a negative effect. However, Nally *et al.* (2011) report that they found that the longer-term effect

of education on employment was positive. This illustrates the complexity of link between education and employment.

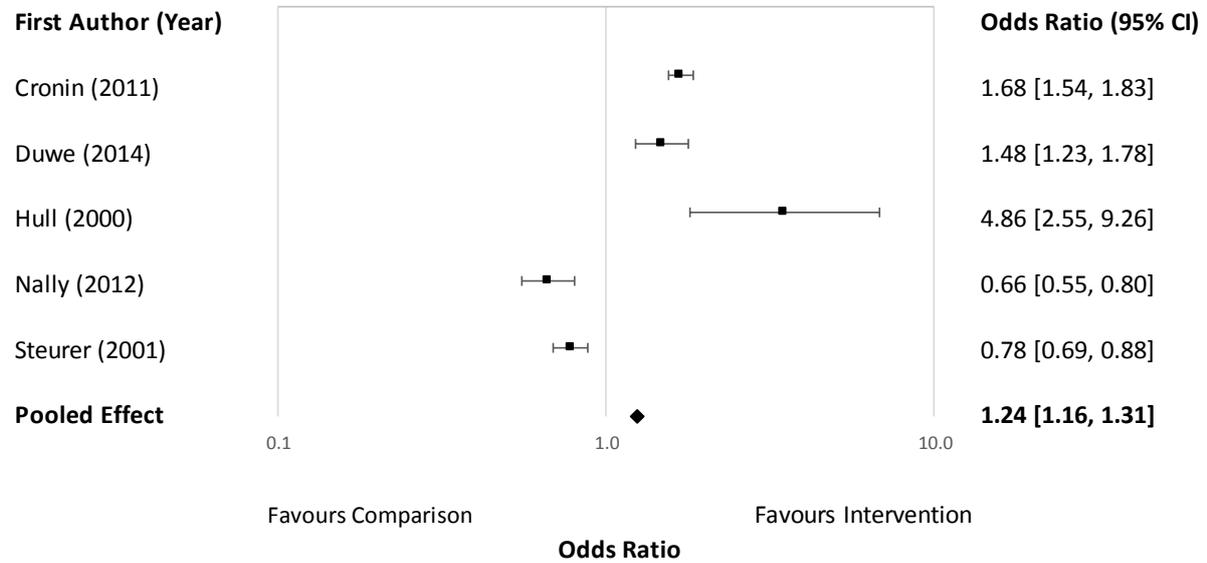


Figure 3 Forest Plot of the Odds Ratio for each of the five employment studies

Interpreting odds ratios

Odds ratios are calculated using the probability of recidivism/employment for prison education participants compared against non-participants. Finding a pooled ratio of 0.64 means that participating in prison education reduces the likelihood of recidivism by approximately one third. Note this is distinct from saying that the results show prison education reduces recidivism by a third. Instead, the odds ratio says that a person who has engaged in prison education is two-thirds as likely ($0.64=64\%\sim 2/3$) as someone who has not engaged in prison education to recidivate. Interpreting the findings from the employment studies should be done with more caution as two out of the three studies sit to the left of the forest plot above (Figure 3). However, the overall pooled odds ratio stands at 1.24. Again, we can interpret this as meaning that those who have engaged in prison education are 24 percent more likely to find employment than those who have not. This does not mean that the rate of employment is increased by 24 percent, but that the likelihood of finding employment is increased. In other words, if rates of employment are very low, the impact of education may be very small. From the 18 studies identified for the recidivism meta-analysis it is not possible to compare gender differences. One study was one male only (Duguid & Pawson, 1998), one female only (Torre & Fine, 2005), nine were mixed and seven not specified. In cases where the cohort was mixed, in general, results were not presented by demographics.

5. DISCUSSION

This review reveals the paucity of quantitative research around the impact of prison education in England and Wales. Despite Gove, Truss and others highlighting the role of prison education in rehabilitation, there is little hard evidence that links educational activity to reduced recidivism or increased employment. Research

reviewed here primarily comes from the United States and often relates to degree-level qualifications. Furthermore, studies vary on the definition of recidivism and employment and many studies provide insufficient information on the type of education they evaluated, the nature of delivery, or the specific population targeted. It is therefore not possible to discuss what type of education is most effective nor at what stage in a sentence, or for what age group it is most relevant. Most importantly, it is not possible to discern whether education acts as a catalyst for change or an enabler for change. With respect to employment, we do not know if it is the skills gained, the qualifications acquired or intangible benefits of education (e.g. greater confidence and articulacy gained through education that secured work). Finally, there are no randomised control trials included in this report limiting our abilities to make any conclusions around causality.

Nevertheless, the overall findings are positive and supportive of recent policy developments in England and Wales, which place more emphasis on prison education. Our review suggests that participating in prison education reduces the *likelihood* of recidivism by approximately one third and that those who have engaged in prison education are 24 percent more likely to find employment than those who have not.

6. CONCLUSION

This review has demonstrated that prison education, in general, does seem to have a desired impact on both recidivism and employment. However, further research is required to understand the role of prison education in the context of England and Wales. Overall, the REA and meta-analytic process has been useful in understanding the landscape of information available in this area. It has revealed the lack of extant literature related to the situation in England and Wales in particular and highlighted the complexities of comparing findings when there is no universal agreement on the measure of recidivism or employment. Finally, it has highlighted the need to combine methods to look beyond the term 'education' and consider types of education and methods of delivery as well as to consider how and why education 'works'.

7. REFERENCES

Papers with one asterisk were one of the 28 papers reviewed in detail.

Papers with two asterisks were one of the 28 papers reviewed in detail and also one of the 18 papers included in the meta-analysis.

Aos, S., Miller, M., & Drake, E. (2006). *Evidence-Based Adult Corrections Programs: What Works and What Does Not*. Washington State Institute for Public Policy. Olympia.

Batuik, M. E. (1997). The State of Post-Secondary Correctional Education in Ohio. *Journal of Correctional Education*, Vol.48(2) pp.70-72.

**Batiuk, M. E., Lahm, K. F., McKeever, M., Wilcox, N., & Wilcox, P. (2005). Dientangling the effects of correctional education: are current policies misguided? An event history analysis. *Criminal Justice*, Vol.5(1) pp.55-74

Bouffard, J., Mackenzie, D. L., & Hickman, L. J. (2000). Effectiveness of Vocational Education and Employment Programs for Adult Offenders. *Journal of Offender Rehabilitation*, Vol. 31(1-2) pp.1-41.

- *Brewster, D. R., & Sharp, S. F. (2002). Educational Programs and Recidivism in Oklahoma: Another look. *The Prison Journal* , Vol.82(3) pp.314-334.
- Brunton-Smith, I., & Hopkins, K. (2014). *The impact of experience in prison on the employment status of longer-sentenced prisoners after release Results from the Surveying Prisoner Crime Reduction (SPCR) longitudinal cohort study of prisoners*. London: Ministry of Justice.
- **Burke, L. O., & Vivian, J. E. (2001). The effect of college programming on recidivism rates at the Hampden County house of correction. *Journal of Correctional Education* , Vol.52(4) pp.160-182.
- *Callan, V., & Gardner. (2005). *Vocational education and training provision and recidivism in Queensland correctional institutions*. National Centre for Vocational Education Research .
- *Cho, R. M., & Tyler, J. H. (2010). Does Prison-Based Adult Basic Education Improve Postrelease Outcomes for Male Prisoners in Florida? . *Crime and Delinquency*, Vol XX(X) pp.1-31.
- Coates, S. (2016) *Unlocking Potential: A review of education in prison*, London: Ministry of Justice
- Creese, B. (2015). *An assessment of the English and Maths skills levels of prisoners in England*. Centre for Education in the Criminal Justice System. London: UCL Institute of Education.
- **Cronin. (2011). *The Path to Successful Reentry: The Relationship Between Correctional Education, Employment and Recidivism*, . University of Missouri Institute of Public Policy, Report 15, Columbia, Mo.:
- Duwe, G., & Clark, V. (2014). The effects of prison-based educational programming on recidivism and employment. . *The Prison Service Journal* , 94 (4), 454-478.
- Davis, L. M., Bozick, R., Steele, J. L., Saunders, J., & Miles, J. N. (2013). *Evaluating the Effectiveness of Correctional Education: A Meta-Analysis of Programs that Provide Education to Incarcerated Adults*, RAND Corporation: . Retrieved Feb 24, 2016 from: http://www.rand.org/pubs/research_reports/RR266.html
- Duguid, S. (1997). Confronting Worst Case Scenarios: Education and High Risk Offenders . *Journal of Correctional Education* , 48 (4), 153-159.
- **Duguid, S. and Pawson, R. (1998). Education, change, and transformation, the prison experience. *Evaluation Review* , Vol.2(4) pp.470-495.
- Duguid, S., Hawkey, C., & Knights, W. (1998). Measuring the Impact of Post-Secondary Education in Prison . *Journal of Offender Rehabilitation* , 27, 87-106.
- Education and Skills Committee (2005) *Prison Education*, London: The Stationary Office Ltd
- **Gordon, H. R. D. and Weldon, B. (2003). The impact of career and technical education programmes on adult offenders: learning behind bars. *Journal of Correctional Education*, Vol.54(4) pp.200-209.
- Gove, M. (2015). *Announcement of a review of education in adult prisons, Written Statement to Parliament: Education in Prison, 8th September*. Retrieved 2016 4-Mar from www.gov.uk: <https://www.gov.uk/government/speeches/education-in-prison>
- Government Social Research Unit (2007b) *Background paper 2 – What do we already know? Harnessing existing research*. London: Cabinet Office.
- Hall, J. (2015). Correctional education and recidivism: Toward a tool for reduction. *The Journal of Correctional Education* , Vol.66(2) pp.4-29.
- **Harer, M.D. (1995). *Prison education programme participation and recidivism: a test of the normalisation hypothesis*. Washington, D.C.: Federal Bureau of Prisons, Office of Research and Evaluation 1995.

- Harper, G. and Chitty, C. (Eds.) (2005) 'The Impact of corrections on re-offending: a review of 'what works'', *Home Office Research Study 291*, London: Home Office
- Hopkins, K. (2012). *The pre-custody employment, training and education status of newly sentenced prisoners Results from the Surveying Prisoner Crime Reduction (SPCR) longitudinal cohort study of prisoners*. London: Ministry of Justice.
- Hull, K., Forrester, S., Brown, J. J., & McCullen, C. (2000). Analysis of recidivism rates for participants of the academic / vocational / transition education programmes offered by the Virginia Department of Correctional Education. *Journal of Correctional Education* , Vol.51(2) pp.256-261.
- Hurry, J., Brazier, L., Parker, M., & Wilson, A. (2006). *Rapid Evidence Assessment of Interventions that Promote Employment for Offenders: Research Report No 747*. London DFES.
- Jenkins, H. D., Steurer, S. J., & Pendry, J. (1995). A Post Release Follow-Up of Correctional Education Program Completers Released in 1990-1991 . *Journal of Correctional Education* , Vol.46(1) pp.20-24.
- Jenson, E. L., & Reed, G. E. (2008). Adult correctional education programs: An update on current status based on recent studies. *Journal of Offender Rehabilitation* , Vol. 44 (1) pp.81-98.
- *Johnson, J. A. (2009). Lifetech Institute: Leading Change through Transitional Centers. *Community College Journal of Research and Practice*, Vol.33(11) pp.942-944.
- *Kelso, J. C. (2000). Recidivism Rates for Two Education Programs' Graduates Compared to Overall Washington State Rates. *Journal of Correctional Education*, Vol.51(2) pp.233-236.
- **Kim, R.H. and Clark, D. (2013). The effect of prison-based college education programs on recidivism: Propensity Score Matching approach. *Journal of Criminal Justice*, Vol.41(3) pp.196-204.
- **Lichtenberger, E. (2011). *Measuring the Effects of the Level of Participation in Prison-Based Career and Technical Education Programs on Recidivism*. Working Paper, 2011.
- *Lockwood, S., Nally, J. M., Ho, T., & Knutson, K. (2012). The Effect of Correctional Education on Postrelease Employment and Recidivism: A 5-Year Follow-Up Study in the State of Indiana . *Crime & Delinquency*, Vol.58(3) pp.380-396 .
- MacKenzie, D. L. (2006). *What works in corrections: Reducing the criminal activities of offenders and delinquents*. New York: Cambridge University Press.
- Ministry of Justice. (2010). *Compendium of reoffending statistics and analysis Executive Summary: Ministry of Justice Statistics bulletin*. London: Ministry of Justice.
- Ministry of Justice. (2013). *Transforming Rehabilitation: A summary of evidence on reducing re-offending* . Ministry of Justice.
- Ministry of Justice. (2014). *Surveying Prisoner Crime Reduction (SPCR)*. Retrieved 2016 14-Mar from [www.gov.uk: https://www.gov.uk/government/collections/surveying-prisoner-crime-reduction-spcr](https://www.gov.uk/government/collections/surveying-prisoner-crime-reduction-spcr)
- **Ministry of Justice, (2015). Justice Data Lab Re-offending Analysis: Prisoners Education Trust.
- Ministry of Justice, (2016). Prison Safety and Reform. Cm 9350. Retrieved 2016 16-Nov from [www.gov.uk: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/565012/cm-9350-prison-safety-and-reform-_print_.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/565012/cm-9350-prison-safety-and-reform-_print_.pdf)
- **Nally, J. M., Lockwood, S. R., Ho, T., & Knutson, K. (2011). *The Effect of Correctional Education on Postrelease Employment and Recidivism: A 5-Year Follow-Up Study in the State of Indiana* . Working Paper.

- **Nuttall, J., Hollmen, L. and Staley, E. M. (2003). The effects of earning a GED on recidivism rates. *Journal of Correctional Education*, Vol.54(3) pp.90-94
- Pearson, F. S., & Lipton, D. S. (1999). The effectiveness of educational and vocational programs: CDATE meta-analyses. *Presented at Annual Meeting American Society Criminology*. Toronto.
- Pettus-Davis, C., Howard, M. O., Dunnigan, A., Scheyett, A. M. and Roberts-Lewis, A. (2016). Using Randomized Controlled Trials to Evaluate Interventions for Releasing Prisoners. *Research on Social Work Practice*, Vol. 26(1) pp.35-43
- Sherman, L. W., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P. and Bushway, S. (1998) 'Preventing Crime: What Works, What Doesn't, What's Promising', *National Institute of Justice Research in Brief*, Washington D. C.: National Institute of Justice
- Social Exclusion Unit (2002). *Reducing Re-offending by ex-prisoners: Summary of the Social Exclusion Unit report*. Retrieved Feb 2016, 24 from http://webarchive.nationalarchives.gov.uk/+http://www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force
- Spearlt. (2016). Keeping in REAL: Why congress must act to restore Pell Grant funding for prisoners. *University of Massachusetts Law Review* , 11
- **Steurer, S. J., Smith, L. G., & Tracy, A. (2001). *Education Reduces Crime: Three- State Recidivism Study*,. Lanham, Md: Correctional Education Association.
- **Torre, M. E. and Fine, M. (2005). Bar none: extending affirmative action to higher education in prison. *Journal of Social Issues*, Vol.61(3) pp.569–594.
- Viechtbauer (2010). Conducting meta-analysis in R with the metafor package. *Journal of Statistical Software* Vol. 36(3)
- Visher, C., Winterfield, L., & Coggeshall, M. (2005). Ex-offender employment programs and recidivism: a meta-analysis. . *Journal of Experimental Criminology* Vol.1(3) pp.295–315
- **Wilkinson, R. A. and Stickrath, T. J. (1995). *Evaluation of the Impact of Correctional Education Programs on Recidivism*. Ohio Department of rehabilitation and Correction
- Wilson, D. B., Gallagher, C. A., & MacKenzie, D. L. (2000). A Meta-Analysis of Corrections-Based Education, Vocation, and Work Programs for Adult Offenders. *Journal of Research in Crime and Delinquency* , Vol. 37(4) pp.347-368
- **Winterfield, L., Coggeshall, M., Burke-Storer, V. C. and Tidd, S. (2009). *The Effects of Postsecondary Correctional Education: Final Report*, Washington, D.C.: Urban Institute
- **Zgoba, K., Haugebrook, S. and Jenkins, K. (2008). The influence of GED obtainment on prisoner release outcomes. *Criminal Justice and Behaviour*, Vol.35(3) pp.375 - 387.